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OF THE

PHILADELPHIA PEDIATRIC SOCIETY

OCTOBER, 1905—JUNE, 1906

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CONTENTS

List of Presidents v
List of Officers for the Year 1906 v
List of Members v

PART ONE.

Presentation of Patients, Abstracts of Papers, and Discussions.

Intrauterine Amputation. By Dr. Millicent B. Hopkins 1
Chorea, Complicated by Double Mitral Disease. By Dr. Millicent B. Hopkins 1
Molluscum Contagiosum. By Dr. Arthur Van Harlingen 3
Infantile Scurvy. By Dr. Herbert B. Carpenter 5
Muscular Pseudohypertrophy. By Dr. Howard C. Carpenter 7
Atypical Hemiplegia. By Dr. Eleanor C. Jones 12
A Patient with Latent Hemiplegia Made Evident by Prolonged Etherization. By Dr. W. G. B. Harland and Dr. Theodore H. Weisenberg 13
A Case of Bell's Palsy in an Infant of Eight Months. By Dr. John H. W. Rhein 14
Marked Angular Deformity of Both Clavicles in Rickets. By Dr. Hubley R. Owen 16
Multiple Exostoses. By Dr. Robert S. McCombs 18
Miliary Tuberculosis. By Dr. Courtland Y. White 18
Diabetic Purpura. By Dr. C. H. Lefcowitch 20
Some Newer Views of the Principles of Infant Feeding, and How They May Be Applied. By Dr. Henry Dwight Chapin 21
Chronic Internal Hydrocephalus. By Dr. S. M. Hamill 34
Multiple Neuritis Complicating Bronchopneumonia. By Dr. Hubley R. Owen 35
Spastic Paraplegia and Wry Neck. By Dr. Hubley R. Owen 35
Strangulated Inguinal Hernia in an Infant of Five Weeks. By Dr. Charles F. Nassau 38
Strangulated Inguinal Hernia in an Infant Thirty-four Days Old. By Dr. Louis H. Mutschler 38
Hernia of the Vermiform Appendix, with a Pin in the Appendix. By Dr. Louis H. Mutschler 38
Perforation of a Meckel's Diverticulum; Operation; Recovery. By Dr. F. S. Woody 39
Multiple Punctured Wounds of the Bowel. By Dr. John H. Jopson 41
A Case of Stricture of the Esophagus upon which Gastrostomy was Performed Six Years Ago. By Dr. John H. Jopson 42
Report of a Case of Intussusception; Operation, and Death on the Following Day. By Dr. John H. Jopson 44
Intussusception. By Dr. H. Z. Giffin 45
A Case of Intussusception in a Child of Six Months; Operation; Recovery. By Dr. Alfred Hand, Jr. 46
The Treatment of Diffuse and General Peritonitis, with Special Reference to the Murphy Method. By Dr. John H. Gibbon 48
An Anomalous Blood Vessel, Visible on the Wall of the Pharynx. By Dr. William N. Bradley 55
Infantilism. By Dr. R. S. Lavenson 56

Digitized by Google

The Relative Frequency of Heart-Disease in Children in Different Countries. By Dr. George W. Norris..... 58
Chronic Leukemia. By Dr. Theodore LeBoutillier..... 58
Pneumonitis in an Infant Four Days Old, Due to the Bacterium Mucosum Capsulatum. By Dr. Herbert Fox and Dr. R. S. Lavenson..... 59
A Case of Streptococcic Infection in the Newborn. By Dr. Samuel McC. Hamill..... 60
Investigations into Whey Proteids. By Dr. Charles F. Judson..... 61
Functional and Venous Murmurs in Children. By Dr. S. McC. Hamill..... 63
Hydrocephalus Associated with Premature Development. By Dr. James K. Young..... 67
Two Cases of Enuresis Exhibiting Tolerance to Large Doses of Belladonna. By Dr. H. Lowenburg..... 69
Pneumonia in an Infant of Seven Months, in which Physical Signs Were Absent During the Entire Course of the Disease. By Dr. D J. Milton Miller..... 71
The Milk Commission: its Purposes and Aims. By Dr. S. McC. Hamill.... 73
The Delivery of Milk and its Care in the Home. By Mr. George Abbott.... 75
Existing and Desirable Laws Governing the Milk Supply. By Dr. Leonard Pearson..... 75
Some of the Dangers of Ordinary Milk; the Physician's Duty to Educate the Public in the Necessity of a Pure Milk Supply. By Dr. D. J. Milton Miller..... 78

PART TWO.

Papers in Full, Published in Archives of Pediatrics.

Report of a Case of Atypical Hemiplegia in a Child. By Dr. Eleanor C. Jones..... 3
A Case of Bell's Palsy in an Infant of Eight Months. By Dr. John H. W. Rhein 6
Report of a Case of Cerebellar Tumor with Necropsy. By Dr. C. F. Judson and Dr. C. D. Camp..... 10
Congenital Renal Adenosarcoma. Report of a Bilateral Case. By Dr. Eleanor C. Jones..... 15
Interesting Bacteriological Findings in a Case of Ulcer of the Hard Palate Associated with Acute Nephritis, in an Infant Aged Two and One-half Months. By Dr. Samuel McC. Hamill..... 22
A Case of Intussusception in a Child of Six Months; Operation; Recovery. By Dr. Alfred Hand, Jr..... 26
Two Cases of Fecal Impaction in Typhoid Fever in Children, Simulating Grave Abdominal Lesion. By Dr. D. J. Milton Miller..... 28
The Food Value of Whey Proteids. By Dr. C. F. Judson..... 33
The Relative Frequency of Heart Disease in Children in Different Countries. By Dr. George William Norris..... 37
Chronic Lymphatic Leukemia in a Child. By Dr. Theodore LeBoutillier.... 40
Two Cases of Enuresis Showing Tolerance to Large Doses of Belladonna. By Dr. H. Lowenburg..... 46
A Case of Acute Croupous Pneumonia, without Physical Signs, in an Infant of Seven Months. By Dr. D. J. Milton Miller..... 49
The Delivery of Milk and its Care in the Home. By Mr. George Abbott.... 52

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THE PHILADELPHIA PEDIATRIC SOCIETY.

Stated Meeting, Tuesday, October 10, 1905.

JAMES H. MCKEE, M.D., PRESIDENT.

INTRA-UTERINE AMPUTATION.

DR. MILLICENT B. HOPKINS showed a boy of ten years, of Russian parentage, whose left arm had been amputated in utero, just below the elbow. Six out of nine brothers and sisters are living, and no other one shows any defect.

Dr. Hopkins then showed a girl of ten, with

CHOREA, COMPLICATED BY DOUBLE MITRAL DISEASE.

The patient was a girl of ten years, who had a severe attack of tonsillitis at four, and several attacks of rheumatism later. The heart condition, with the chorea, was first noticed in March, 1901. Now there is marked throbbing of the vessels of the neck, and venous pulse in both jugulars is plain. The heart is greatly hypertrophied, and both presystolic and systolic murmurs are audible.

MASTOID OPERATION IN EARLY INFANCY.

DR. HOPKINS showed also an infant with middle ear disease, in whom radical operation for mastoiditis was performed at nine weeks of age. The facial palsy occurred before operation.

DR. L. J. HAMMOND said that cases of facial paralysis should be of great interest both from the standpoint of diagnosis and prognosis. Not only is it extremely important to differentiate in which of the three possible regions the nerve is involved, but as well the cause of the involvement should be considered before it would be possible to say what the outcome of any individual case would be. The nerve may be involved intracranially, intrasegmentally or peripherally.

His experience has been that in most cases the lesion has occurred in the bony segment, arising from disease of the middle ear. The group of symptoms characteristic of lesion within the Fallopian canal, external to the geniculate ganglion, are complete unilateral paralysis of all muscular movements, absence of hemiplegia, decidedly abnormal electrical reaction, loss of reflex associate movements, paralysis in the upper and lower halves of the face. The fauces, palate and uvula may also be paralyzed, through the interference with the great superficial petrosal nerve

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just before it joins the sphenopalatine ganglion. If, however, the ganglion is involved, we have, in addition to the before mentioned paralysis, dryness of the mouth on the same side, with some loss of taste in that half of the tongue and increased sensitiveness to musical sounds.

When the paralysis is of central origin, anywhere between the nucleus in the pons and the bottom of the internal auditory meatus, paralysis is not complete, as the branches supplying the eyelid are not affected; thus winking is possible. This is a point of great importance in the differential diagnosis. There is also associated with the intracranial lesion hemiplegia of the opposite side; electrical reactions may be normal; there will be persistence of the associate reflex movements; there is muscular atrophy throughout the area of distribution of the nerve; there may be internal squint from the involvement of the abducens nerve; some degree of deafness may also exist because of the involvement of the eighth nerve.

When the lesion is peripheral the paralysis may not be complete, as it will involve only those muscles that are controlled by the special fibres involved.

Should conservative treatment not bring about recovery within a reasonable time, surgical treatment, with the object of removing the pressure when the involvement is within the bony segment, should be regarded as judicious, and his experience in operations of this sort has been eminently satisfactory.

Dr. J. P. Crozer Griffith said, with regard to facial paralysis in early life, that the disease in his experience was certainly extremely uncommon. During seventeen or eighteen years of dispensary practice he had observed the condition very seldom. It is, of course, probable that more cases would appear in dispensaries devoted to diseases of the ear, since affections of this class were by far the commonest cause. This did not, however, apply to the instances developing in the newborn, where injury by instruments was undoubtedly the most common cause.

Dr. W. G. B. Harland said that when the lesion is central it is, of course, on the side opposite to the facial palsy, whereas, when in the bony canal or peripheral part of the nerve it is on the same side. If the nerve is affected after its exit from the bony canal the paralysis is usually only partial, the forehead and eye escaping. Most cases of facial paralysis occur in older people, not in children.

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DR. GRIFFITH said that he had seen a number of cases of intra-uterine amputations. He called attention to the fact that it was frequently combined with other pathological intra-uterine conditions. Quite recently, for instance, he had seen an imbecile child with intra-uterine amputation of one arm.

DR. ARTHUR VAN HARLINGEN showed photographs of a case of

MOLLUSCUM CONTAGIOSUM.

Catherine G., eleven months old, was brought to the out-patient department of the Children's Hospital last July. According to the mother's account, no one of the family or immediate neighbors, who were likely to come in contact with the infant, had previously shown any similar eruption. The present eruption began to appear some time in February last, about six months ago. The first lesion made its appearance on the ear and from time to time new ones showed themselves on the labia majora, on the chest, on the face, particularly about the mouth, on the hand and on the leg.

DR. VAN HARLINGEN'S CASE OF MOLLUSCUM CONTAGIOSUM.

Very shortly after the development of the earlier lesions in the infant, the mother showed signs of the same affection, similar lesions developing upon the right cheek, the left breast and one lesion on the back of the neck. Up to the time she came to the

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hospital none of the lesions had disappeared. New ones were being added from time to time.

When seen for the first time the appearances presented were those seen in the accompanying photograph. There were about twenty-five small tumors visible, half of which were about the mouth and on the face, and the remainder scattered over the surface generally. The smallest tumors were about the size of a pin's head, semi-globular in form, firm, smooth, shining and pearly in lustre. Each tumor was surrounded or covered by a minute network of blood-vessels. The larger tumors varied in size, probably according to their age, the largest being globular and nearly 1 cm. in diameter, somewhat flattened, rough on the surface as if opening out to discharge their contents. No sign of an opening was observed in any of them, but from one or two a slight warty outgrowth could be seen. The lesions were touched several times with nitric acid and have now about all disappeared, leaving little or no trace. To-day the mother called with a neighbor's daughter, ten years of age, who is accustomed to fondling the baby. She shows a typical lesion on the chin.

Dr. Maurice Ostheimer stated that among over 2,000 school children whom he had examined last year, only one case was found, and in that case there were but two lesions.

Dr. Frank C. Knowles had seen 2 cases in the Pennsylvania Hospital, but in neither case were there many lesions.

Dr. D. J. Milton Miller asked how these cases were treated. He confessed that he had never seen a case.

Dr. Griffith referred to an epidemic of this condition at St. Vincent's Home several years ago.

Dr. Van Harlingen added that molluscum contagiosum was first described by Bateman, about 100 years ago. Later an idea arose that it was not contagious. But there is now no doubt of its contagious character, though the source of the contagion is not definitely settled. In a Parish hospital fourteen children developed the disease from one case. He has rarely seen so many lesions as in this case. In the treatment some authorities advise excision; he applies a caustic, such as nitric acid. In this case the application of nitric acid had proved quite efficient, only four lesions remaining out of the original twenty-five.

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Dr. Herbert B. Carpenter showed a girl of nine months with

INFANTILE SCURVY.

At birth, after normal labor, her weight was nine and one-half pounds. She was breast-fed until two months old, when she weighed seven pounds. Then she was given sterilized milk, one-third, with water two-thirds, for four weeks: this caused vomiting and loss of weight. The next food was condensed milk (one part to twelve parts of water) for three weeks; then Mellin's food; and five weeks later peptogenic milk powder; later Imperial Granum, until five months of age. She was never well, but did better on Imperial Granum than upon any earlier food. She did not gain weight, however, and lately began to lose again. About ten days before admission to the hospital, her ankles and legs suddenly swelled, and bleeding from the gums was noticed at the same time. The child cried when handled and would not sit up or even attempt to move arms or legs. Both knees were swollen and very tender, the swelling extending up the femurs. In the hospital she at once improved upon a suitable milk mixture, orange juice and beef juice. She shows very little scurvy now, although her gums still bleed.

Dr. Miller had seen the case when it entered the Children's Hospital. The swelling was so marked as to suggest osteitis of the femurs and had even been so regarded. The limb was exceedingly painful and swollen, extending almost to the upper epiphysis of the femur, and involving the upper end of the leg-bones. There was sponginess of the gums with some bleeding. The baby had been fed on a variety of foods, but had never taken fresh milk alone. It improved at once upon an unpasteurized milk mixture and orange juice. It had been discharged from the hospital before recovery, because the ward was closed on account of an outbreak of vaginitis.

Dr. Griffith said that he had seen in all about 40 cases of scurvy, mainly in consultation. In nearly all of the cases the attending physician had failed to recognize the disease. This he considers in no way a reproach to the ability of the attending physician. Although generally easy of diagnosis, the disease is extremely perplexing to one who has never seen it before. Thus it is often diagnosed as rheumatism, disease of the spine, etc. He

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had repeatedly seen physicians when once the diagnosis was made wonder how they could possibly have failed to recognize the nature of the case. It is this element of newness in their experience which is accountable for this.

Writers in French pediatric journals have in the last few years been awakened to the occurrence of scurvy in that country. In seeking for the cause they have stated that the frequency of the disease in the United States depended on the prevailing use of commercial foods, among which they classify "modified milk." This shows how little the American system of infant feeding is understood in France.

As regards symptoms, it must be stated that by no means always is the classical combination discoverable. Some children will start with purple, swollen gums. Very frequently, however, the first symptom is pain, generally in the legs. This may, or may not, be associated with the involvement of the gums. In some instances, in Dr. Griffith's experience, hematuria has been one of the earliest symptoms, and sometimes the one symptom for a time. This, however, is less common.

Dr. T. S. Westcott said that to him one of the most interesting features of scurvy was the varying susceptibility manifested by different infants. Many other children could have been fed just as this child had been and yet not have developed the disease. If this were not true scurvy should be much more frequently encountered than it is. He instanced the case of a child under his care which had developed early scorbutic symptoms three times during its first year while being fed upon a peptonized mixture heated to 150° F. The symptoms had been anticipated and subsided each time within a few days under appropriate treatment. In another child which had had severe scorbutic symptoms when first seen, a second attack developed several months later, while taking a pasteurized milk mixture, despite the fact that orange juice had been given almost continuously since the initial manifestations.

Dr. Alfred Hand, Jr., stated that he felt sure no member of the Pediatric Society would fail to recognize his first classical case of scurvy, as the disease had been brought to the Society's attention so often, but his experience was the same as Dr. Griffith's, though to a lesser degree, that unless a physician was on the watch for it in the bottle-fed children under his care, the first case

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might be very puzzling to him. The physician in attendance on the last case seen by Dr. Hand gave a graphic description of the great tenderness that exists by saying that the child was "tender if you looked at him"; for these children know by experience that the slightest handling causes pain, and so they cry at the approach of any one.

DR. CARPENTER said that he had seen 4 cases during the summer. Most of his cases occurred in children with a poor digestion.

DR. HOWARD C. CARPENTER presented two brothers, eight and three and one-half years, with

MUSCULAR PSEUDOHYPERTROPHY.

Family History.—Paternal grandfather, age sixty-eight years, is living and well. Paternal grandmother, age fifty-eight years, is living and well. A paternal aunt died of tuberculosis. Maternal grandfather married a first cousin and died of tuberculosis at the age of twenty-five. Maternal grandmother also had tuberculosis; died at the age of forty-eight years; shortly before her death she became insane. A first cousin on mother's side has some nervous affection, the exact nature of which is not known. He is at present entirely helpless and his mind is in some degree affected. Father is living, of a nervous disposition. Physically his development is normal. He shows no signs of muscular pseudohypertrophy. The circumference of his calf, at the widest part, is 33 cm. Mother is living and well.

The two patients are the only children living. One other child, a girl, three years younger than the oldest boy, died of scarlatina. The older of the boys is eight years old; natural birth, at which time nothing abnormal was noticed. He weighed 10½ pounds. He was breast-fed for one year, then fed on Mellin's food and cow's milk. He was never sick until five years old, except for a mild attack of whooping-cough when two years old. At five he had bronchitis; when six a severe attack of double pneumonia. He also had measles and chicken-pox. When seven he had scarlatina, mumps following. He has had adenoids removed, and has been circumcised. His first tooth appeared at four and one-half months, he began to walk at nineteen months, and to talk when just past two years. He is rather backward at school, being still in the first grade. He speaks and writes well,

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and is good at figures, but is a poor reader. When the child was one and one-half years old, mother first noticed that the calf muscles seemed unusually well developed; since that time his legs have steadily increased in size. It was not until last year, following the attack of scarlatina, that the mother noticed that the muscles of the back seemed over-developed. The only subjective symptom is weakness. The child has great difficulty in going upstairs, or in rising from the ground. His appearance is that of a well-nourished white boy, about eight years of age. The most striking feature of his appearance is the enormous development of the calf muscles; the size of his legs would seem normal for a child twice his age. His station is fair, his feet, as a rule, are not far separated, but there is marked lordosis of the lumbar spine. He has the characteristic gait of muscular pseudo-hypertrophy. Besides the great hypertrophy of the soleus and gastrocnemius, which are very firm on palpation, the quadratus lumborum and the supra- and infra-spinatus are also very much overdeveloped. On the other hand the pectoral muscles are markedly atrophied, and, to a less extent, the biceps, triceps, subscapularis, trapezius, latissimus dorsi, and muscles of the thigh. The sterno-mastoid and other neck muscles are not affected. Neither are the gluteal nor the hand muscles affected. The muscular power in the hands is weak. There is slight talipes equinus, but the heels touch the ground in walking. The head is normal in shape, but large. Pupils are dilated, but equal, responding to light and distance. A few teeth are beginning to show signs of caries. The tongue is large and greatly increased in thickness. The tonsils are hypertrophied and ragged. The external lymphatic glands are not enlarged. The bony chest is well developed, and there is no evidence of rachitis. The area of cardiac dullness is not increased. The apex beat is in the mammary line, 1 cm. below the nipple. The heart sounds are good, a soft, hemic murmur is heard at the base. The hands and feet are apt to be cold. The lungs are negative. The abdomen is prominent in the standing position, but not when the patient is in the recumbent posture. The abdomen is soft, the liver and spleen are not enlarged. The knee jerks are diminished on both sides. Babinski reflex not present. Kernig's sign is absent. There is complete extension and flexion at the knee and elbow joints. Sensation is normal; there are no fibrillary contractions or tremors. His measurements follow:

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Circumference of mid calf, left	30	cm.
" " " " right	29½	"
" " " thigh, left	33½	"
" " " " , right	33½	"
" " " arm, left	16	"
" " " " , right	15½	"
" " " forearm, left	16½	"
" " " " , right	16	"
" " abdomen at umbilicus	53	"
" " chest at nipples	56	"
" " head	52½	"
Length of R. Lower extremity from ant. sup. sp. to the int. mal	57	"
Length of L. Lower extremity from ant. sup. sp. to the int. mal	56	"

The younger boy is three and one-half years old. Natural birth, weighing 10 pounds. Child was apparently normal at birth. He was breast-fed until one year old, then on Mellin's food and cow's milk. When one year old, he was very ill for two months, with what was probably diphtheria. He had chicken-pox when one and one-half years old, and a slight attack of measles when two and one-half years old. At the end of his second year he had scarlatina, with mumps following. He is mentally somewhat backward, and talks indistinctly. When asked a question, often, instead of answering, he will repeat the question. His first tooth appeared between the fourth and fifth month. He walked at eighteen months. He did not begin to talk until he was three years old. At about one year the mother first noticed that the child was not as strong as he looked, and since that time the weakness has been slowly increasing. The child goes upstairs on hands and knees. When rising from the ground he is obliged to climb up on himself. On examination he looks like a healthy white boy, about three years of age. Station is good, with the exception of slight lordosis. His gait is not normal, he shows a slight tendency to waddle. From inspection, his muscular development seems unusually good. His calf muscles are large and likewise the quadratus lumborum and supra- and infra-spinatus. He has very little wasting of the pectoral muscles, nor are the muscles of his arm atrophied. His head is large, but well shaped. The middle turbinates are hypertrophied, and the tonsils are very large. The tongue is clean and somewhat enlarged. The first

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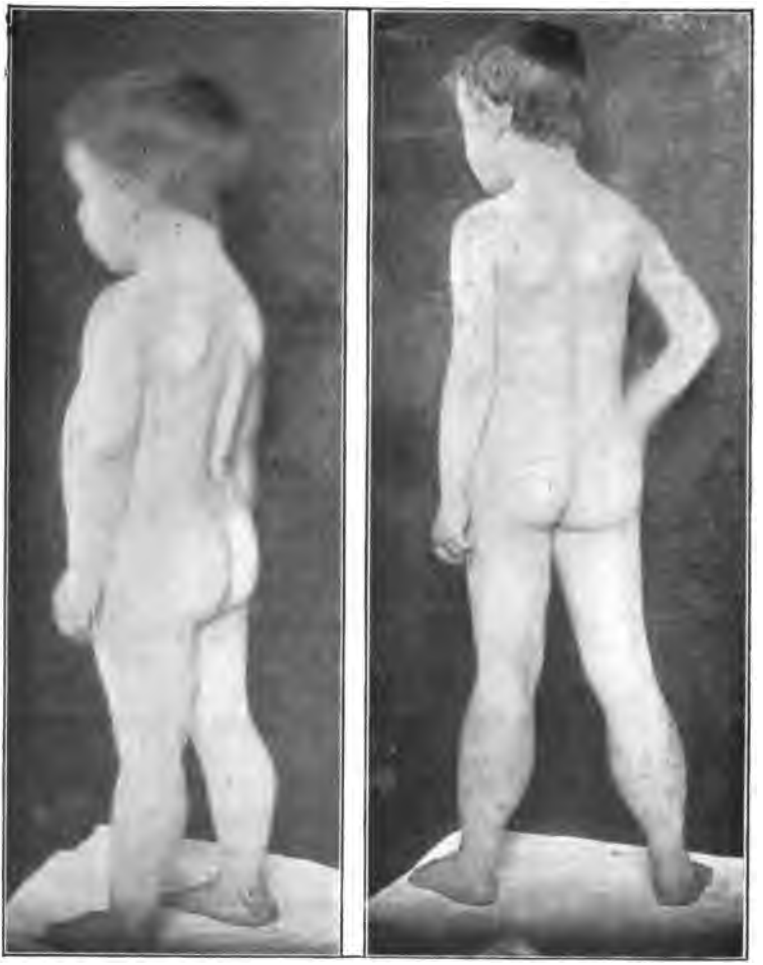
sound of the heart is murmurish at the apex. There are a few large moist râles at the base of right lung posteriorly. Abdomen is soft, liver palpable just below the edge of the ribs on right side.



DR. HOWARD C. CARPENTER'S CASE OF PSEUDOHYPERTROPHIC MUSCULAR ATROPHY. TWO BROTHERS, THE YOUNGER THREE AND ONE-HALF YEARS OLD, THE ELDER EIGHT YEARS OLD.

Spleen cannot be palpated. Knee-jerks diminished, especially on the right side. Kernig's sign absent. Babinski reflex absent. Sensation normal. Measurements follow:

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Circumference of mid calf, left	22	cm.
" " " " , right	21½	"
" " " thigh, left	31½	"
" " " " , right	29	"
" " " arm, left	16½	"
" " " " , right	16	"
" " " forearm, left	15½	"
" " " " , right	15	"
" " abdomen at umbilicus	50	"
" " chest at nipples	55	"
" " head	50½	"
Length of R. lower extremity from ant. sup. sp. to int. mal.	40	"
Length of L. lower extremity from ant. sup. sp. to int. mal.	40½	"

Dr. Hand said that this condition, like scurvy, is easy to recognize if it is borne in mind; but if not, then the first case might be puzzling for a time. He referred to the familial tendency of the disease, and also to the fact that in the last 3 cases that came under his observation no other member of the family was affected, although in each case there were several brothers and sisters in the family. He mentioned the superficial resemblance which the younger child exhibited bore to a cretin, with the prominent tongue, the slight collar of fat and the lordosis, but he believed that this was only superficial.

Dr. Griffith called attention to the fact that the pseudohypertrophy which characterizes the form of paralysis illustrated by the cases presented might, in a way, be called one of the accidental qualifications. That is to say, there is certainly a very close connection between the different types of muscular dystrophy, although in the pseudohypertrophic form it is true that the enlargement is the most apparent one; for eventually all cases reach a condition almost entirely atrophic. One case which he recalls, seen late in the disease, exhibited a most profound atrophy, except for an enormously hypertrophied tongue. In the early stages this had been a typical pseudohypertrophic case. In the "upper-arm type," too, a certain amount of hypertrophy is said to be present at first.

Dr. Carpenter added that these children had been taking thyroid extract without any effect.

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THE PHILADELPHIA PEDIATRIC SOCIETY.

Stated Meeting, Tuesday, November 14, 1905.

JAMES H. MCKEE, M.D., PRESIDENT.

ATYPICAL HEMIPLEGIA.

DR. ELEANOR C. JONES showed this patient, a boy of eight years. With the associated history and symptoms of cerebral hemiplegia, there is present a flaccid condition of the paralyzed hand and arm. When the child was eighteen months old he became ill with the symptoms of fever, vomiting and unilateral convulsions, followed by paralysis of the left side. The convulsions continued at intervals for about six months. The leg is spastic; the hand and arm are flaccid. Faradic response is obtained from all the muscles affected. The reflexes are present on the paralyzed side.

(The full report of this case will be found among the "Papers" in this volume on page 3.)

DR. WILLIAM G. SPILLER said that he had examined the patient and had been much interested in some of the unusual features of the case. The flaccidity of the left upper limb he considers remarkable in connection with the other symptoms. In about 30 cases of hemiplegia that had developed in childhood examined by him six or seven years ago, and also in others examined since, he had found some with flaccidity of a portion of a limb; but to find flaccidity of the whole limb is extraordinary. He is inclined to think that there was more than encephalitis present in Dr. Jones' case. Often inflammation of the central nervous system is chiefly in one part, although implicating other parts. He therefore thinks that there may have been some poliomyelitis, although not a great deal—not sufficient by itself to have caused persistent symptoms; but, in connection with the cerebral lesions, capable of altering the spasticity. Dr. Spiller said that there seemed to be some weakness of the upper distribution of the seventh nerve on the left side, at the time of his examination. In addition to the flaccidity, there was slowness of faradic response, and more power in the movement of the big toe than in that of any of the other toes. Choreiform or athetoid movements, which were present, usually do not occur unless there is spasticity of the limb, and their association with flaccidity in this case would seem to indicate some disturbance of the spinal cord, in association with a greater disturbance of the brain.

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Dr. Eleanor C. Jones said that she was much interested in Dr. Spiller's view of the case. Dr. Sachs, in his text-book, remarks that cerebral and spinal palsies may occur at different periods in a child's life, but that he has only seen one such instance. In the case presented she thought the history and symptoms all seemed to point to a cerebral lesion only, except for the flaccid condition of the hand and arm.

Dr. Spiller replied that Gowers speaks of implication of the face in connection with poliomyelitis, and that Dr. Griffith had mentioned a similar case to him. Dr. Spiller himself has seen poliomyelitis in association with encephalitis under the microscope.

A PATIENT WITH LATENT HEMIPLEGIA MADE EVIDENT BY PROLONGED ETHERIZATION.

Dr. W. G. B. Harland and Dr. Theodore H. Weisenberg showed this patient, in whom hemiplegia of the same side came on immediately after serious mastoid operation upon the left ear. Careful examination revealed atrophy of the arm and leg of long standing, and explanation for this was found in the history of forceps used at birth. It is supposed that rupture and obstruction of the middle cerebral vessels took place during delivery, from which the child had largely recovered before he began to walk, and that circulatory changes during prolonged etherization lighted up lesions long dormant. During the past year, or about eighteen months after the operation, symptoms similar to those on the left side have appeared on the right, making the case probably one of diplegia or Landry's paralysis.

Dr. B. Alexander Randall said that he had not seen many cases of hemiplegia in his mastoid work. One occurred in a lady of seventy years, who had previously been hemiplegic. (The wound had had time to heal practically, although not absolutely.) The paralysis occurred three weeks after etherization, so Dr. Randall could not ascribe it to any close relation with etherization or operation. It was soon followed by a third and fatal outbreak. No postmortem was permitted. The case would interest one a great deal in relation to the evidence it furnishes that in the absence of the typical signs of brain abscess, one should not be too rash in making exploratory investigations.

Dr. A. A. Eshner asked Dr. Harland to tell the Society something more about the previous history, especially with re-

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spect to the early mental development before the operation, and as to the state of the fundi of the eye. In view of the history of the case, it seemed to Dr. Eshner not impossible that the boy might have had a bilateral lesion at the time of birth, the symptoms remaining latent as described. Why this should have been excited into activity by etherization, he was unable to say, however. It also seemed to him possible that there might have been a meningitis in conjunction with the ear trouble, at first unilateral, but subsequently involving the cortex on both sides.

Dr. Harland replied that the eye-grounds were examined and found to be entirely normal. The boy came out of the ether in the normal way, his mental state was good, and he was bright and active. Dr. Harland had seen the patient only a day or two before the operation was performed, and then only for a few minutes. The ear condition indicated immediate operation and a general examination of the patient was not made.

Dr. Weisenberg did not agree with Dr. Eshner that there was a bilateral lesion at birth. He thought it would be a curious pathological process which would first manifest itself by unilateral symptoms appearing in infancy, and secondarily by an involvement of the other side eight years after. So far as the diagnosis of meningitis is concerned, Dr. Weisenberg thought it would be impossible for a unilateral meningitis to appear at birth and cause the symptoms, because if there had been a meningitis it probably would have involved both sides of the cortex and besides would hardly have caused hemiplegic symptoms.

A CASE OF BELL'S PALSY IN AN INFANT OF EIGHT MONTHS.

Dr. John H. W. Rhein presented this patient, an infant of eight months, who became paralyzed on the right side of the face the day following the evacuation of a small abscess on the right side, beneath the chin. The case was a typical Bell's palsy of a severe type. The reactions of degeneration were marked, and the faradic irritability was lost. There was nothing peculiar about the paralysis, nor in its cause, which was probably the result of extension of the inflammation from the sublingual abscess. The point of interest was in the tender age of the patient. Bell's palsy is most frequent between the ages of twenty and fifty years, and quite rare under three years of age. The case is reported in full among the "Papers" in this volume on page 6.

Dr. Randall said that he had seen one case that rather re-

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sembled Dr. Rhein's in one or two particulars, although differing markedly from it in others. Dr. Randall was asked to operate on a child of six months for polyp of the middle ear, and found that facial palsy was already present in a slight degree on the affected side—the right. The glands about the neck and ear were affected, but not in a marked degree, considering the rather severe infection that had been present for three or four months. Examination showed a large polyp filling the deep part of the canal. Trying with the probe to find the pedicle revealed a loose spicule of bone in the region behind the malleus; he withdrew this gently, and found that it was the exfoliated stapes, partly destroyed. It being clear, therefore, that the oval window was already involved, together with the parts about it, he naturally supposed that the facial nerve was involved at the point where it passes close above the stapes, forming the upper lip of the window. This is the point at which dehiscence is most common, and in the lower animals, the facial nerve here lies in a groove only, without any bony covering. This theory was disproved, however, by the fact that suppuration of the glands was marked by increase of trouble; and that the facial palsy subsided almost to the vanishing point with the passing away of this condition of the glands in front of the ear. Thirty glands in all suppurated in succession and were curetted away—the proposition to extirpate them having been negatived. This afforded ample opportunity to study the rise and fall of facial palsy in relation to the gland suppuration. The child presented by Dr. Rhein, said Dr. Randall, has shown the occurrence of an abscess in the region of the chin. This may have had an effect of neuritic excitement, first involving the branches, and ultimately the whole of the facial nerve.

The cases seen in middle ear trouble are numerous, particularly in relation to mastoid operation, especially of the more radical type. The occurrence of facial palsy must be regarded as one of the dangers in such procedures. Seventeen per cent. of those operated on at the New York Eye and Ear Infirmary in one year suffered with facial palsy. Many of these patients were, however, from the East Side and had lived under exceptionally unfavorable conditions. While Dr. Randall had not encountered any such proportion as this, he had met with a considerable number of cases, particularly in connection with caries of the labyrinth, such as in a specimen presented from a baby. In a list compiled by

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the speaker several years ago there were 10 cases of exfoliation of the labyrinth in patients not more than two years and a half old. In many of these cases there was note of the occurrence and persistence of facial palsy.

Dr. Randall said that one other point concerning the development of the bone deserved a word of consideration, as it is commonly not appreciated. Preposterous as it may seem, it is a fact that there is no known enlargement of the labyrinth after birth. It has then reached its full size. The growth of the skull is huge after this, and the distance between the labyrinths doubles; but the labyrinth itself is not known to develop. The same is true of the ossicles and, to a considerable extent, of the facial nerve. In the infant, the whole geniculate ganglion may be uncovered with parts of the facial adjacent. Of course, there is far greater exposure of the nerve; but, on the other hand, there is far less cramping of it within bony walls, where a little inflammatory pressure may exercise an unfavorable influence. The fact that so many parts about the ear undergo no development after birth is deserving of better notice.

ANGULAR DEFORMITY OF THE CLAVICLES IN A RACHITIC CHILD.

MARKED ANGULAR DEFORMITY OF BOTH CLAVICLES IN RICKETS.

Dr. Hubley R. Owen presented this patient, a child of twenty-one months. The infant was fed at the breast until sixteen months old, and was then given ordinary "table food." At nine months of age it had convulsions, and has continued to have them at intervals up to the time of its admission to the Children's

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Hospital. It presents the typical picture of rickets. The most remarkable feature of the case is the angular deformity of both clavicles. (See figure on page 16.) This deformity of the clavicles is probably due to one of two causes. Either to the faulty position of sitting with legs crossed and leaning forward on the arms, thus throwing forward the shoulders and making tense the pectoralis major; or, secondly, to pressure forward on the shoulders when the child is in the recumbent position, the heavier spinal portion sinking into the pillow or soft bedding.

DEFORMITY OF FOREARM AND CLAVICLES IN A RACHITIC CHILD

Dr. D. J. Milton Miller thought that the deformity in this case was very remarkable. He had never seen anything of that nature in a rachitic child before; the ordinary deformity in such children being an exaggeration of the usual curves. At first, Dr. Miller thought that the child had broken its clavicle, but an examination of the other side at once dispelled this idea. He considered that Dr. Owen's theories explained the deformity better than any other.

Dr. Jones showed the photograph of a child with a similar deformity, a colored infant of twenty months with marked symptoms of rickets. (See figure.) The child, when sitting, supports herself with her arms. The pressure on one arm has been so great as to produce a sharp bend in the bones of the forearm, and there

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is a humping of the inner end of the clavicles, producing a marked deformity.

MULTIPLE EXOSTOSES.

DR. ROBERT S. MCCOMBS exhibited x-ray photographs of a patient with multiple exostoses. The child is fourteen years old and has had the disease for two and a half years. New growths have been appearing at short intervals, until at present she has a total of forty-nine large and small exostoses. On the long bones the growths are situated near the epiphyses and are more or less symmetrical. The patient is the only one of her family with this disease.

MILIARY TUBERCULOSIS.

DR. COURTLAND Y. WHITE showed three card specimens of miliary tuberculosis from the pathological service of the Children's Hospital.

CASE I.—Acute miliary tuberculosis of the lungs. The tubercles were numerous and evenly distributed throughout the lobes. They varied from grey to yellowish grey in color and were about 1 mm. in diameter.

CASE II.—A somewhat similar condition of the lungs, differing, however, from the former case in that the tubercles were larger and distinctly yellow in color.

CASE III.—A chronic caseous pneumonic process of the left lower lobe with central softening of the caseous mass, and a small cavity formation. The other lobe of the left lung and the lobes of the right lung showed numerous scattered miliary tubercles with areas of bronchopneumonia.

DR. HAND said that it might be interesting to give the clinical history of one of these patients, whom he had seen in the wards of the hospital. The specimens, which he had not seen before, made Dr. Hand feel justified in the diagnosis of acute pneumonia, made during life. The temperature was persistently elevated, the respirations were rapid, and areas of bronchial breathing were scattered through the lungs. In a paper read by him before the State Medical Society, Dr. Hand stated that one may make the diagnosis of pneumonia from elevation of the temperature and rapidity of the respirations. One is not, however, always justified in inferring that the pneumonia is due to the pneumococcus. He has seen in some extensively infiltrated lungs a fibrinous infiltration, as well as the ordinary lesions of tuber-

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culosis. The air vesicles around each miliary tubercle have a fibrinous deposit. This is not very common, but Dr. Hand thought it likely that sections from this lung would disclose such a condition. The clinical diagnosis of pneumonia in infants, even when one feels sure of the diagnosis, might be modified in a number of cases if one could make the autopsy and find that the tubercle bacillus was the cause of the pneumonia. Dr. Hand thinks that one is justified in calling these cases pneumonia, clinically, until the autopsy is made.

Dr. D. J. Milton Miller said that two of the specimens shown were from patients under his care. He confessed that, in both cases, he had failed to make the diagnosis during life, although the possibility of tuberculosis had been thought of, but not seriously considered. In one of the cases, the error was, in Dr. Miller's opinion, quite excusable; in the other, he believed the diagnosis should have been tentatively made, or, at least, more earnestly considered. The first case had a very acute course. The child was sick but a week, and presented, on admission, the signs and symptoms of acute bronchopneumonia; it died within forty-eight hours after admission. There was no family history of tuberculosis, and there was nothing in the history or course to indicate that the case was other than one of acute pneumonia. The second case was quite different. The baby had been ill for two weeks when brought to the hospital, had emaciated greatly, sweated profusely and had an uncle who died of tuberculosis. During its three weeks of life in the hospital, the patient had the same symptoms plus areas of consolidation and marked fluctuations of temperature. With such history and symptoms the diagnosis of tuberculosis could have been tentatively made, yet the case was considered as one of sub-acute bronchopneumonia. The diagnosis of acute pulmonary tuberculosis is attended with great difficulties. Still, with rapid emaciation, sweating, and, above all, a history of family tuberculosis, the possibility of the latter should always be considered.

Dr. McKee said that he had never seen such large tubercles as those in one of the specimens shown by Dr. White. They recalled to his mind a case reported by Dr. Riesman and himself in 1894. Over the left lobe posteriorly, in spite of a great resistance to percussion, they obtained a tympanic note. They thought they were getting the stomach tympany transmitted

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through a consolidated organ. The left lower lobe presented an enormous cavity, which was practically the only cavity in the lung. The tubercles were large elsewhere—decidedly large, as in the case just presented.

DIABETIC PURPURA.

DR. C. H. LEFCOWITCH reported a case of coexisting purpura and alimentary glycosuria in a three year old boy. The patient was nervous and suffered from enuresis and a stomatitis of moderate severity. His appetite was poor but his general nutrition was fair. After two months' treatment, largely dietetic, the boy apparently made a complete recovery. One year later the patient presented the typical aspect of a true diabetes mellitus, but no symptoms of purpura. After nine months' constant attention the boy remains comfortably healthy while under a judicious diet. Dr. Lefcowitch emphasized the importance of urinary examination in the infant and child in making a diagnosis and in the study of metabolism.

DR. CHARLES F. JUDSON and DR. C. D. CAMP reported the pathological findings in a case of cerebellar tumor.

(The full report will be found among the "Papers" in this volume on page 10.)

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THE PHILADELPHIA PEDIATRIC SOCIETY.

Stated Meeting, Tuesday, December 12, 1905.

JAMES H. MCKEE, M.D., PRESIDENT.

DR. HENRY DWIGHT CHAPIN, of New York, addressed the Society on the subject:—

SOME NEWER VIEWS OF THE PRINCIPLES OF INFANT FEEDING AND HOW THEY MAY BE APPLIED.

The following is an abstract of Dr. Chapin's paper:—

In the past the teaching concerning infant feeding has rested largely on authority and what was taught was often deemed secondary to *who* taught it, and owing to this way of looking at the matter the literature of infant feeding has become loaded down and clogged with a mass of obsolete terms and contradictory statements which serve only to foster controversy and cause confusion. The profession at large need first-hand knowledge of the simple facts on which scientific feeding is based so that they may use discriminating judgment and not be dependent on mere authority.

It is time that it was more generally recognized that the terms fats, proteids, carbohydrates and mineral matter apply to all forms of food and are not restricted to milk, and that although all milks contain these elements it does not follow that all milks are alike or differ only in quantitative composition. In the past the teaching has been very much like saying that a diet of bread and milk was exactly like a meal of beefsteak and potatoes and water, because a chemist had analyzed both and found them to contain the same quantities of fats, proteids, carbohydrates, mineral matter and water. While this may have been the case, it does not follow that they are equally suitable under all conditions. No more so are the milks of different species of animals after they have been readjusted to contain the same percentages of the food elements. There are inherent physical differences in milks which are for a specific purpose, and before scientific feeding can be applied these differences must be recognized and understood.

The differences in milks, aside from those of quantitative composition, lie principally in the proteids and in that part of the proteids called casein. Casein, unfortunately, is a term applied in a very loose manner to all of the proteids of milk or to the portion that produces curds. Whatever may be its ultimate

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chemical composition it shows very different properties in the milks of different species of animals, and it is very misleading to speak of casein of cow's milk and of human milk as being the same, or to state that the differences between the two milks lie in the relative quantities of casein present. Little progress will be made until this plan of teaching is abandoned.

Before digestion of milk takes place in the stomach, it is changed into a solid by the digestive secretions and it is the casein of the milk that forms the solid. As each milk produces a different kind of solid it is evident enough that the caseins of milks are not alike. It is plain to see that the purpose of the casein of the milk, changing into a solid under the action of the digestive secretions, is to gradually accustom the stomach to digest solid food and a little study shows that each milk is digested very much as the food of the adult will be digested when weaning takes place. Nature adapts the milk to the developing stomach, and as stomachs differ it is not at all surprising that milks differ in their physical properties.

All methods of infant feeding with cow's milk resolve themselves into supplying sufficient quantities of fats, proteids, carbohydrates, mineral matter and water and in some way modifying the casein so as to adapt it to the infant's stomach. Alkalies combine with casein of cow's milk and form a new combination which will not form a curd, so the addition of lime-water to milk is for the purpose of modifying the casein and should be so taught. Carbonate of potassium has the same effect, and the addition of one or two grains of bicarbonate of soda to the ounce of food is for the purpose of neutralizing the acid of the stomach and preventing the action of the rennet ferment on the casein and formation of curds. Citrate of soda added to milk has the same effect but the result is obtained by another chemical process.

The dilution of milk with gruels or dextrinized gruels modifies the curds mechanically and allows normal digestion to take place. Most methods have scientific bases, and the one to be used must be left to the physician after he knows the principles involved. He must decide whether or not he will feed the casein combined with alkalies or citrate of soda so that no curd will form, or whether he will break up his curd with a gruel, and allow digestion to proceed and a normal digestive tract be developed. The day has gone by when it can be taught that different procedures are employed for the purpose of making cow's milk like human milk.

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DR. CHAPIN, also, exhibited to the Society an apparatus which he has devised for the purpose of collecting the urine of infants.

DR. J. P. CROZER GRIFFITH, in opening the discussion on Dr. Chapin's paper, said that he agreed with the speaker in almost all he had said, and certainly in regard to the impossibility of getting a milk for infants which would be identical with mother's milk, owing not only to chemical, but also to biological differences, which have been discovered in recent times. The great lesson of the evening, said Dr. Griffith, is the impossibility of devising any food that will be *the* food for children. It may be the food for one child but not for every child. It is necessary to study each child as an individual. The grouping of them all together, with the idea of finding a food which will suit infants as a group, has been the weak point in the practice of physicians. Unless one considers the child and its symptoms rather than the food, one cannot make a success.

The inside of the intestine is just as much outside the body as is the skin. What the child eats, in the true sense of the term, is not what it merely swallows; for if the food is swallowed and is vomited or passed out in the feces, it is not eaten, as far as eating is of any benefit. Only what is assimilated does any good. It is the question of assimilation which is the important one.

Dr. Griffith remarked that the result of his experience had led him to at least one conclusion: that he does not know of any way to feed the child, although he knows of ways. It is important, therefore, to study what way is the way for the particular child.

Dr. Griffith did not think that Dr. Chapin had really meant to state that he does not believe in percentage feeding, although one of his remarks had sounded that way. The fact that his address contains so many references to percentages shows this. The uncertainty of the composition of different layers of milk is the difficulty that all pediatrists encounter. Feeding with cream mixtures is much more accurate in Philadelphia, for it is possible for us here to obtain assayed cream which is, to all intents, of uniform fat strength. If one wishes to use percentage feeding, one can rely pretty closely on what one is getting, if the assayed milk and cream are employed. His own practice is always that of giving a percentage milk mixture without cereal or other addition unless such addition is clearly called for. One must be ready to modify the food promptly in whatever way seems best for the individual child.

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Dr. Edwin E. Graham said that all pediatrists are agreed that they must have cow's milk with definite percentages of fat, proteid and sugar; and that all agree that the bacterial content must conform to a certain rule, and that the milk must come from the proper kind of cows.

The fat content of milk gives comparatively little trouble. Fat indigestion is not met with to any great extent in comparison to the trouble with the proteid. There is a vast difference between the proteid of cow's milk and that of human milk. There is a difference not only in percentage, but also in chemistry and physiology. The proteid of cow's milk contains a large quantity of casein; that of human milk comparatively little. The difficulty in feeding the proteid of cow's milk to children is that it is sometimes impossible to give enough proteid. The proteid of cow's milk is acted on by the rennet and forms a soft curd. Later, it is acted on by the acid and a hard curd is formed, entirely different from that of human milk.

Dr. Graham thought that the germ of Dr. Chapin's paper lies in trying to teach how a certain amount of proteid may be given to the child that is not developing. Most children develop without any serious trouble. They gain in weight and strength, and there is no evidence of rickets; but there are some children that cannot digest enough proteid to enable them to develop properly. If to these children one is unable to give more than one-half of one per cent. of cow's proteid, one should adopt the suggestion made by Dr. Chapin some years ago to give these children cereals. In this way one is enabled to give them the proteid that they need. If one wishes to give more proteid, one should follow the idea suggested by Dr. Chapin and dextrinize the gruels. While this is not animal, but vegetable proteid, it is unquestionably assimilated; and the child gets the benefit. During the last year or two cereals have been so largely used by pediatrists in this country that their employment has gone beyond the stage of experiment.

Dr. Graham thought that Dr. Chapin had not given the right idea regarding gravity cream. He first spoke against it, and then used a quart bottle of milk and spoke for it. There is very little difference between Dr. Chapin's method of using gravity cream, with a certain amount of the under milk, and the ordinary method that is used with gravity cream and fat-free milk. Of course one has to know the percentage of fat in the milk. If one uses milk of definite percentages, one knows how many ounces

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to remove to obtain a certain percentage of fat. Taking the top 8 ounces of a milk of 4 per cent. fat will give a 12 per cent. cream; removing the top 6 ounces gives a 16 per cent. cream, and the top 4 ounces a 20 per cent. cream. Practically all pediatrists think in percentages; and if they do not, they should immediately learn to do so. It does not make any difference whether one uses gravity cream, centrifugal cream or Dr. Chapin's method; by taking a certain amount of cream, diluting it with a certain amount of water, and adding a certain amount of milk will enable one to obtain any desired mixture.

So many things have been told pediatrists lately by chemists that it is difficult to know where one stands in regard to lime-water and bicarbonate of soda. After having been accustomed to add lime-water, one is now told that cow's milk is not acid. Dr. Graham agrees with Dr. Chapin that there must be a certain group of cases in which the addition of lime-water is of benefit.

Pediatrists of this country owe much to Dr. Chapin, who taught them to use cereals in infant feeding. While cereals are never found in mother's milk, it is well to put them in the milk that is substituted for it. These cereals can be dextrinized; and the child gets not only more carbohydrate, but also an increased amount of proteid.

Dr. Thompson S. Westcott was afraid that Dr. Chapin had unintentionally given the impression that by his method of top-milk dilutions infant feeding could be reduced to a very simple process. This certainly was not Dr. Chapin's intention. One of the great advantages of percentage-feeding is the flexibility of combination that it affords. The combination of fat and proteids are almost limitless. Apart from the addition of proteids in the gruels, Dr. Westcott thought that Dr. Chapin had led the Society to believe that he feeds only with dilutions of either 20, 16 or 9 ounces of top-milk. Used in this way, such mixtures are only cream dilutions; and the relation of fat to proteids is constant. In any dilution of a top-milk 20 ounces containing 6 per cent. fat, the relation of fat to proteids must be the same. The same is true of the 16 ounces and the 9 ounces.

Dr. Westcott has used Dr. Chapin's method of obtaining various strengths of cream with his dipper, and has found it very convenient. In the first place one thus avoids purchasing either gravity cream or centrifugal cream; and for this reason, one avoids the danger that always comes with the possibility of contamina-

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tion from extra handling. Cream thus obtained is of the same age and degree of purity as the milk with which it is mixed, and this is one of the greatest advantages in the use of the top cream, especially in summer. Dr. Westcott usually employs in the summer nothing but cream obtained in this way, and does not use ordinary centrifugal cream or gravity cream.

By using the dipper, however, one can easily get a cream running about 16 per cent. by taking the top 7 ounces. Using this combination with whole milk, one has everything necessary for combining one's mixtures on the basis of 16 per cent. cream and whole milk.

One should remember, however, in any discussion of infant feeding, that in a large class of cases coming under one's care the bottle mixture represents not only the food, but also the medicine of the child. These are the cases that come to one after having undergone a long series of experiments. They have, perhaps, been started on the downward path by the milk mixtures suggested by well-meaning, but ignorant, trained nurses. For this class of patients one requires not so much a development as a regeneration of the gastrointestinal tract. In the extreme degrees of these chronic catarrhal conditions, the secreting structures have been very seriously interfered with; and in many cases portions of them have been destroyed. In such cases one needs a method of feeding that is not so easy as the simple diluting of cow's milk, and such patients are often extremely intolerant of any but the lowest percentage of fats and proteids. In these cases the use of whey mixtures becomes absolutely necessary. In severe cases it is practically impossible to bring up these children without using whey as a means of furnishing a certain proportion of a proteid that taxes the digestion very much less than the casein curd. With this may be combined gradually increasing proportions of a milk or a weak cream dilution, until the baby is cautiously carried along to the more ordinary mixtures, such as Dr. Chapin has described.

Dr. David L. Edsall thought that the biological standard in working out the question of infant feeding is a matter of great interest and likely to be ultimately of great practical importance, and that there are some facts of value in regard to it that we can even now see. Since the studies on the effects of injecting foreign proteids into animals have been instituted, everyone has been convinced that there are remarkable differences in milk that are

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not shown by chemical studies, and one cannot fail to see that there are important differences between milk from different species of animals that have not been and may never be shown chemically.

Not only must the character of the food be considered, but also that of the individual. The most striking biological illustration of this point is afforded by a series of experiments undertaken at one of the United States Agricultural Experiment Stations upon rumination in cattle. Young cattle, fed large amounts of food that was of such character as not to be ruminated, gradually grew ill and ultimately died of obscure disturbances of nutrition, evidently dependent upon the lack of rumination. If, while in the late stages of sickness, they were allowed to have food that they could ruminate, they rapidly came back to health. This shows that factors that appear through biologic experiments, but not by chemical or other analyses, have to be dealt with.

Dr. Chapin's point regarding the effect of cream and cereals upon curding, Dr. Edsall considers of real importance. Lime-water, etc., unquestionably produce chemical changes; cereals do not, but act mechanically. There are excellent scientific reasons to consider it a questionable proceeding to alter chemically the character of the milk given to infants. It does good in some instances, but not in others; and in some it is possible that it does actual harm. It is important to attempt to settle this question. In cases in which infants have difficulty in digesting the curd, mechanical modification is clinically more successful in overcoming the trouble than is the chemical modification of the curd.

Dr. Chapin's work on the use of vegetable proteids has been of much interest; he has so clearly demonstrated the clinical value of cereals that the question can be said to have been generally settled, even long ago. Dr. Edsall and Dr. Miller were the first to show that vegetable proteid is well absorbed and metabolized by infants, but were by no means the first to show this in older persons. Dr. Edsall said that, so far as experimental work has gone, the statement made by Dr. Chapin that vegetable proteid is quite as well assimilated as is animal proteid is correct. Nearly all cattle and many human beings get almost all their proteid after infancy from vegetable sources. A large series of investigations have shown clearly that vegetable proteid, when administered in proper form, is quite as well taken care of as is animal. There is no reason to question the usefulness of vegetable proteid in metabolism.

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Dr. Chapin's method of modifying milk appeals strongly to Dr. Edsall on account of its simplicity. Dr. Fife and he undertook a large series of analyses of modified milk about two years ago, the milk having been modified with more elaborate methods. These analyses convinced them that more elaborate methods of modifying milk very frequently fail to be accurate, owing to no fault in the milk or in the method, but to the fact that the person that undertakes it does not know how to perform the work. The more simple and direct the method is made, the more likely it is to be accurate. Dr. Edsall agrees with Dr. Chapin in thinking that it is impossible to be sure of getting the modification down to a small fraction of 1 per cent. The milks and the modifiers differ too widely. The more simple the method, the better the result.

Dr. Alfred Hand, Jr., wished to thank Dr. Chapin for devising the dipper, as he had found it of great help in a certain group of cases. Some infants have not sufficient power of digestion to overcome the fluctuations that occur from time to time in milk-mixtures, so that when it is necessary to limit the range of these fluctuations, certified milk and the Chapin dipper simplify these cases very much.

Dr. Hand wished to lay emphasis on a point which Dr. Chapin mentioned casually, with reference to the greater richness of Jersey milk and its consequent lesser digestibility. If the chemistry of the fats of milk is ever worked out as well as that of the proteids (about which not much is even yet known), probably as great differences will be found between the fats of different species as we now know exist between the proteids. And these differences probably influence the digestibility of the fats. The richness of Jersey milk was shown recently in attempting to direct by mail the feeding of an infant living out of Philadelphia. For several months progress was satisfactory, but then constipation, regurgitation and loss of weight set in. Investigation of the milk showed that it was derived from a private herd of Jersey cattle and analysis of the milk found 10 per cent. fat., while the cream, which was raised in pans, was found to contain 54 per cent. As a result, the mixture upon which the child had been fed contained, instead of the calculated 3.8 per cent. fat, 8.3 per cent. fat.

Dr. M. Howard Fussell said that in the beginning of Dr. Chapin's remarks he had felt disappointed, because Dr. Chapin

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was giving the impression that the percentage method of feeding is not the proper method to use. It was afterward apparent to Dr. Fussell that Dr. Chapin did not mean to intimate this. Percentage feeding has given Dr. Fussell more comfort in his general practice than any other one thing.

Dr. Fussell considered the point raised by Dr. Griffith, that there is no particular way of feeding, but that there are ways, to be a good one. One should vary the percentage to suit the particular child.

Dr. Samuel McC. Hamill said that he wished to express his appreciation of the instrument for collecting the urine of infants, which is a problem with which all pediatrists have to deal. He then described a method that he had adopted and had used for some years with success. He places an ordinary invalid's cushion on the bed and under this a flat pus pan or stewing pan. The bed around the cushion is then built up with pillows so as to be on a level with it. The child with the diaper removed and the body clothes drawn up is then placed on the cushion and left there until the urine has been voided. In this way he has succeeded in collecting the twenty-four hours' urine, which Dr. Chapin has not been able to do by his method.

Dr. Hamill says that he has been quite won over to Dr. Chapin's method of feeding dextrinized gruels, to which he was at first antagonistic, because of the unfavorable results he had experienced in feeding non-dextrinized carbohydrates. Dr. Hamill uses carbohydrates almost uniformly in his practice at the present time.

Dr. Charles M. Seltzer said that there are some facts that are brought out especially from the biological standpoint. One is that practically the proteids in milk, as served in large cities, are not as high as is usually supposed, especially from the high-grade dairies; because many of these milks are standardized at the dairy by the addition of cream, so that the fats that are added do not carry with them the proteids that are supposed to be present and that are undesirable for infant feeding. Dr. Seltzer was pleased that stress had been laid upon this point. On account of standardizing this milk, the ratio of 4 per cent. fat to 4 per cent. proteid is not maintained. A milk standard of 3 to 4 per cent. carries with it ¾ of 1 per cent. of proteids to each 1 per cent. of fat, thus making 3 per cent. proteids in 4 per cent. butter-fat milk, and not 4 per cent. of each as shown on Dr. Chapin's chart. This is a

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variation of 25 per cent., and is a matter of considerable importance in infant feeding.

In regard to the subject of tuberculosis, Dr. Seltzer remarked that to say that tuberculosis is more prevalent among high-grade than among low-grade cattle, is to do an injustice to those that are trying to bring forth high-grade milk for the use of the children that pediatrists are trying to give life to. The reason that this idea prevails is that the high-grade animals are guarded so carefully, while the low-grade animals are not examined at all. In the latter it is impossible to discover cases of tuberculosis until the disease becomes rife, as the farmer will not have the cattle examined. He knows that the State will not pay for his losses, and that, unless some special society like this looks into the matter, what goes into the can will be measured out and will pass muster in the city. In the high-grade dairies the disease is discovered as soon as it appears. Tuberculosis is no respecter of breed. It is more contagious in cattle than in human beings; and also gives a more prompt reaction to the tuberculin test. It is impossible to obtain a herd of cattle that is entirely free from tuberculosis, if these cattle are bought in the open market. They may all be apparently healthy when purchased, yet in three to six months some will respond to the tuberculin test, the disease having been incipient. Owing to the frequency of the examinations, the disease is discovered so early in its course that it is questionable whether the milk could have carried contagion before the discovery was made. If the animals are kept alive, later on the milk will carry infection.

High-grade cattle are too valuable for their owners to allow them to be neglected. They are kept under better conditions than ordinary cattle, and are watched more carefully. It would not do for a man with such a herd to take the chance of letting them run with those that are not tested; because the presence of one or two badly infected cows would, in a few months, spread the disease throughout the herd and involve a great loss in animals and money.

Dr. J. Cardeen Cooper was glad to hear Dr. Chapin emphasize the importance of proper feeding in its relation to the development of the child. He thought that the casein of cow's milk was influenced to a certain extent by the food of the animal. If cattle are systematically put on a certain kind of food and are kept free from irritation, such as is produced by flies, etc., the

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casein of their milk will be different from what it would be under other conditions.

Dr. Cooper had heard it authoritatively stated that the nearest approach to human casein is the casein of hog's milk. This had reminded him of a remark made by Dr. Leidy, while Dr. Cooper was a student, that the anatomy of the hog resembles that of man more than any other animal, and that this is not the only respect in which the two animals are similar. Dr. Cooper, during the summer of 1903, had fed three infants on hog's milk with remarkable success. The only difficulty encountered was in obtaining the milk.

Dr. Chapin had said in his paper that high-grade cattle are more susceptible to tuberculosis than the common grade. Dr. Cooper said that the Veterinary Report of the State of Illinois for 1904 did not bear out this assertion; in fact, according to this report the higher grades, under proper care, are less susceptible to tuberculosis.

Dr. Chapin, in closing the discussion, said that he always prefers gravity cream to centrifugal cream. While in the latter one gets accurate assays, yet with his system of taking all the fat with a certain proportion of the milk one obtains a normal emulsion. This is not the case in centrifugal cream. In a gravity cream the groupings of the fat-corpuscles is very different from what it is in centrifugal cream. In ordinary cream, the fat-corpuscles are arranged in various groups; but in centrifugal cream this grouping is interfered with, making a deviation from the order of nature. While one may get the percentage right, the emulsion is interfered with. When an emulsion is once destroyed, it cannot be completely reformed. The assimilability of gravity cream is much better than that of the centrifugal. In spite of the accuracy of the latter, therefore, Dr. Chapin does not care to use it.

The advantage of Dr. Chapin's system is that it can be applied everywhere, from the North Pole to the Tropics. All one has to do is to take certain layers from a quart of milk with a dipper holding an ounce. Not only is a normal emulsion not interfered with, but handling is avoided. The more cow's milk is handled, the worse it is. With Dr. Chapin's method, the milk is sealed at the dairy, and is not opened until ready to be prepared for the baby's use. In manipulating, it is exposed to the air, dirt and contamination. Centrifugal milk is really not milk at all.

In regard to the use of alkalies, Dr. Chapin would not decry

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their use, but he wishes to insist that one should understand just what one is doing when using them. It is often desirable to interfere with the rennet action. In the diet-kitchen under his care, Dr. Chapin frequently has lime-water and other alkalies added. When rennet is put into milk to which lime-water has been added there is no curd formed. It is sometimes desirable to throw the digestion out of the stomach into the bowel, but lime-water should not be used in a routine way.

With regard to the fact that cereals are never found in human milk, Dr. Chapin said that this argument is seldom heard now; for neither does one find cow-casein nor sugar in human milk. The casein of one animal is intended to develop the digestive tract of that animal. The casein of the cow is intended to develop the digestive tract of an animal that has four stomachs. If one should not put into a baby's stomach anything not intended to be put there by nature, one should not give it cow's milk.

Dr. Chapin says that he does believe in percentage feeding, but thinks that it has been pushed to an extreme that cannot be carried out. It is of great value, however, in that it causes one to know the food value of the things put into the baby's stomach. One should think in percentages to the extent of about what food principles one is using, and being able to modify them within certain limits.

Dr. Chapin uses whey feeding occasionally. The accuracy of whey, however, has been overestimated, inasmuch as the supposed ratio between the insoluble proteid and the whey-proteid is not constant. All milks contain a soluble and an insoluble proteid. The soluble is for first carrying on the digestive process. This is shown by soup, which is taken at the beginning of dinner, when we need a quickly soluble proteid. All milks have the soluble proteid, but the ratio to the insoluble is not constant. It is impossible to have an accurate system based on this process. Another objection is that the casein, or the insoluble proteid, is a nucleoproteid, which is valuable in building up tissue. The soluble proteid is not a nucleoproteid, and is largely intended for the purpose of quickening the digestive process. If one gets the proteid too much in the soluble form, one leaves out the nucleoproteid, or the true tissue builder. The value of whey is to be recognized in certain cases, however.

In Jersey cows, the fat is in larger globules than it is in ordinary cows, but this fact is probably not of much practical value.

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All that Dr. Chapin claims is that his is an easy system of getting at certain layers, and that in these there is a constant ratio between the fats and the proteids. These layers are exceedingly constant, and can be depended upon for practical feeding.

In regard to the remark that different foods give different caseins, Dr. Chapin said that this fact is new to him. All the recent experiments have shown that one cannot essentially alter the secretion of milk by food. One may temporarily affect it; but each animal, just as each woman, has an essential production capacity for milk. It has been thought that by varying the diet of a woman one could run up or down the proteids and fats, but Dr. Chapin does not believe that this can be done. His experience is that worry and sleeplessness make possible differences in the milk supply. When the baby is not doing well and the mother is disturbed at night, by having her go away from the baby and get two or three nights' rest, one may make her able to feed the baby better. Dr. Chapin thinks, however, that pediatrists had better get out of their minds the notion that by feeding one can essentially alter the secretion of milk; and it is the same way with different animals.

Dr. Chapin has tried giving asses' milk to babies, but it is hard to obtain; and, if one cannot easily get it, it is not worth taking into consideration. In one instance in which he tried it, it took the whole outfit of the house to hold the ass; and then the animal went dry. The milk of these animals may be good, but it is not available; so the profession will have to stick to cow's milk.

Dr. Chapin said that he had learned a valuable fact, that high-grade cows are not more tuberculous than low-grade. He is not a practical veterinarian, and has been obliged to take his data from what he reads, but he thinks the explanation advanced by Dr. Seltzer is plausible.

Dr. Chapin has found that the proteids do not follow the fats so closely as has been supposed. He has the reports for three years from high-grade dairies in which the proteids and fats were assayed several times a month. There were 5, 5½ and 6 per cent. of fat; but the proteid in no case was higher than 3.6 per cent. This fact, however, need not disarrange the feeding scheme; because for the purposes of feeding it is close enough to think along these lines, and, after all, one cannot treat a baby as a machine. One must give it what it can take. According to the simple system shown by Dr. Chapin, one may alter the proteids as the baby can take them.

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THE PHILADELPHIA PEDIATRIC SOCIETY.

Stated Meeting, Tuesday, January 9, 1906.

JAMES H. MCKEE, M.D., PRESIDENT.

CHRONIC INTERNAL HYDROCEPHALUS.

DR. HAMILL presented a girl fourteen years old with chronic internal hydrocephalus. She had never walked. The enlargement of the head was first noticed when she was two years old. At the age of four years it measured 25¼ inches and at the present time measures 27 inches. Her eyeballs did not protrude; her features were normal and her expression bright.

The point of special interest in the case was the degree of mental development. Her memory is excellent; she reads and spells better than any of the children of her age in the Home for Incurables, of which she is an inmate, and she reads stories and remembers them indefinitely. She commits verses to memory with remarkable ease; she has made moderate progress in geography, but has had great difficulty with the simple propositions in arithmetic, not being able to get beyond addition and subtraction. She is unable to write, on account of a marked tremor of the hands, but she is capable of composing letters, as shown by the fact that she is called upon by the other children in the Home to aid them in the arrangement of sentences and in the spelling of words.

Dr. Hamill referred to a number of instances in the literature in which there had been normal mental development with hydrocephalus and to one or two in which genius was manifested. He quoted a case referred to by Dr. Bright in his Medical Reports, in which there was a fair degree of intelligence and freedom from bodily discomfort, which Bright attributed to the fact that, of the 7 or 8 pints of fluid found within the cranium, all but one were outside of the ventricles. The fluid had escaped from the ventricles through an abnormal opening on one side of the corpus callosum. As the extra ventricular fluid increased, the hemispheres were gradually forced to the base of the skull. This condition of things relieved the internal pressure and prevented the extensive destruction of cerebral tissue which one ordinarily sees in these cases.

Dr. Hamill thought it probable that the findings in this case might throw some light upon the degrees of physical comfort and mental development met with in other cases.

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MULTIPLE NEURITIS COMPLICATING BRONCHOPNEUMONIA.

DR. HUBLEY R. OWEN presented this patient, a girl five years old, who was admitted to the Children's Hospital with bronchopneumonia. On the twelfth day of the disease there developed a well-marked multiple neuritis, characterized by complete loss of power in the lower extremities, and partial paresis of the upper extremities and the muscles of the head and neck. There was pain on pressure over the nerve trunks, impaired cutaneous sensation, and the reflexes were abolished. The neuritis came on very suddenly. Seven days after the onset improvement was first noted in the movement of the head from side to side, and in the attempt to draw up the left leg. Each day thereafter brought improvement in the condition, and she gradually regained the power to draw up her legs in bed; her grip grew stronger and the ataxia of the arms, which had been marked, was greatly improved. One month and seven days after the onset of the paralysis she could wholly flex both legs, and ten days later she could stand alone by the side of the bed. The power of speech returned slowly, and the few words that she used were spoken indistinctly. The pneumonia ran a course of twenty days before the lungs were clear. The reactions of degeneration were present.

SPASTIC PARAPLEGIA AND WRY-NECK.

DR. OWEN presented this patient, a child twenty-six months old. She was admitted to the Children's Hospital with symptoms of general weakness, most marked in the lower extremities, and retraction of the head to the right side. The family history was negative. The birth was normal. When one year old was sent to the Municipal Hospital for scarlet fever, where she remained for six months. Since this attack of scarlet fever she has been unable to stand, except for a few seconds at a time, and there is marked retraction of the head to the right side. This deformity is more noticeable when the child is in the upright position. The knee-jerks are greatly exaggerated, and there is a slight ankle clonus on the left side.

DR. D. J. MILTON MILLER was on duty when this first patient was admitted to the hospital. The diagnosis at the beginning was uncertain, although the case was considered as one of neuritis. The attack came on very suddenly, and there seemed to be no marked pain. Attention was first called to the condition by the nurse, who reported that the child cried when handled. Exam-

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ination revealed a general paresis, more marked on the right side; the head fell back, and the child was unable to use its hands or raise its legs; there was, also, marked incoordination of the hands, and the reflexes were abolished. Dr. Spiller saw the case, but did not consider it a neuritis. He thought the symptoms were due either to a profound toxemia or to a meningitis, but examination of the spinal fluid was negative. This diagnosis was based on the slight sensory disturbance. At first there was very little atrophy, and never any marked wrist-drop or foot-drop. Dr. Miller said that now, he noticed, there is steppage gait, and, he understood, the reactions of degeneration are present; besides, the subsequent course shows the diagnosis of neuritis to have been correct. Dr. Miller did not agree with Dr. Owen that these cases are common in children. In the numerous cases of pneumonia that have come under his observation, he had never seen a case of neuritis, although the condition is comparatively common in typhoid fever.

Dr. Samuel McC. Hamill referred to an attack of multiple neuritis occurring in his oldest boy (aged eight years).

Two days after the end of a trans-Atlantic voyage, he complained of inability to use his legs satisfactorily. The following day, whilst walking through the Zoological Gardens in Berlin, he gave out entirely and had to be carried to a cab by his nurse. When he returned to the hotel, he complained of moderate pain and tenderness in the course of the nerve trunks of the legs, and of great weakness in the leg muscles. He was able to stand when supporting himself, but his legs gave way on any attempt to walk.

His temperature was 99° F., and he had absolutely no other symptoms. The loss of power and pain progressed persistently for three days and he was unable to stand alone. The pain never became very severe and his temperature did not go above 99° F. At first his reflexes were exaggerated and later diminished, but were never absent.

On the fourth day of the attack, he developed an acute follicular tonsillitis, with the beginning of which the nervous symptoms improved. The throat manifestations disappeared within forty-eight hours; the moderate enlargement of the cervical glands disappeared, but his temperature persisted elevated for three weeks, each day going up to or above 101° F. It fell abruptly at the end of this time and remained normal. Nothing could be discovered to account for the persistent fever. The

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nervous symptoms had gradually improved in the meantime and the child was able to stand alone and take a few steps.

The gain in power in the legs, from this period, was fairly rapid, and by the end of six weeks he could walk about without much fatigue or impairment in his gait. By the end of three months he had practically regained his normal power.

Dr. Hamill attributed the neuritis to the same infection that produced the tonsillitis. Two physicians who saw the boy in Vienna were more inclined to think it dependent upon exposure to the wind on board ship or to possible poisoning from eating canned foods.

The boy was an unusually vigorous child and his health up to the time of the beginning of the loss of power had been perfect since birth.

Dr. John H. Jopson, referring to the second case shown by Owen, thought that it was difficult to find a lesion to account for the spastic paraplegia and the wry-neck, unless it were due to some cervical irritation caused, possibly, by Pott's Disease, although there was nothing abnormal to be felt in the cervical region, except the rigidity. In all cases of this sort in children it is necessary to exclude Pott's Disease, and Dr. Jopson did not consider that it had been positively done in this case.

Dr. Eleanor C. Jones showed card specimens of "Congenital Sarcomata of the Infant Kidney, with Report of a Bilateral Case." This case is reported in full among the "Papers" in this volume on page 15.

Dr. Samuel McC. Hamill reported a "Case of Infection by an Organism Resembling the Micrococcus Hemorrhagicus." This case is reported in full among the "Papers" in this volume on page 22.

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THE PHILADELPHIA PEDIATRIC SOCIETY.

Stated Meeting, Tuesday, February 18, 1906.

ALFRED HAND, JR., M.D., PRESIDENT.

STRANGULATED INGUINAL HERNIA IN AN INFANT OF FIVE WEEKS.

DR. CHARLES F. NASSAU exhibited this patient. Strangulation had existed for more than thirty hours. The hernia, which was of the complete oblique inguinal variety, had resisted all attempts at nonoperative reduction. The operation was performed at St. Joseph's Hospital on January 11, 1906, under chloroform anesthesia. The sac contained a very black knuckle of small intestine. The sac was tied high up but not excised. The cord was not transplanted. A collodion dressing was applied and the wound healed by primary union.

STRANGULATED INGUINAL HERNIA IN AN INFANT THIRTY-FOUR DAYS OLD.

DR. LOUIS H. MUTSCHLER reported this case. The patient was a poorly-nourished breast-fed infant, thirty-four days old. It had never been ill. The mother said that she had never noticed any swelling in the groin or scrotum. Twenty-four hours before admission to the Episcopal Hospital the child began to vomit. The following morning the mother noticed a "lump" in the child's groin. The family physician practiced taxis without avail. On admission to the hospital there was a swelling in the inguino-scrotal region, tense, reddened and painful. The baby had a blood-stained stool one hour before admission. Operation revealed a knuckle of gut tightly constricted and very dark. It was impossible to replace or withdraw more intestine without division of the tightly constricted ring. This was done, the intestine replaced, and the wound closed. The child made a rapid recovery and is now perfectly well, four months after the operation.

HERNIA OF THE VERMIFORM APPENDIX, WITH A PIN IN THE APPENDIX.

DR. MUTSCHLER also reported this case. The patient, an infant of seven months, was admitted to St. Christopher's Hospital. For three months previous to admission, the mother had noticed a swelling in the right groin. Several attempts at reduction had failed. On

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the day before admission the baby became very sick. The child had high fever and seemed to be in pain. There was no vomiting and no blood-stained stools. The swelling in the inguinoscrotal region was much inflamed, tender and edematous. The surrounding tissues resembled those seen about a badly infected wound. An incision was made, and a cord about half the diameter of one's little finger exposed. In this cord a resisting substance could be felt, and, cutting down at this point, a rusty pin presented itself and was extracted. The wound was drained with gauze. The child had a temperature ranging from normal to 105°F. for about ten days. Five weeks after the operation there developed a fecal fistula, which remained open for ten days more. About six months later the child was admitted to the hospital to be operated upon for hernia. The operation revealed the cecum and appendix in the sac. The appendix, which was attached to the base of the sac, was removed. The radical operation for hernia was performed. The child made a good recovery, and has no return of the hernia several months after the operation.

Dr. H. C. Deaver said that, although he had been associated with two children's hospitals for ten years, he had found strangulated hernia a rare condition in children, especially in young children. The youngest child he had seen was four weeks old. The hernia had been strangulated for two or three days, and the bowel was gangrenous. The patient died from the effects of the operation as well as the strangulation. Dr. Deaver has not seen many cases in children under ten or twelve years old.

Dr. Henry R. Wharton said that he agreed with the other speakers that while hernia is common in childhood, strangulation is very rare. He had seen few cases of strangulation in children under puberty, and had only operated in one case under a year old—an infant of about three weeks. He had operated on a few patients in the first, second and third year; but he felt sure that strangulation is a very uncommon accident in the hernias of children. These cases usually do well. Like all others, if operated on sufficiently early, almost any method of radical cure is followed by good results.

PERFORATION OF A MECKEL'S DIVERTICULUM; OPERATION; RECOVERY.

Dr. F. S. Woody reported this case. The patient, a boy of nine years, was admitted to the Children's Hospital of the Mary

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J. Drexel Home on December 9, 1905. Two days before admission he was seized with severe epigastric pain, followed by vomiting. The vomiting continued for thirty hours, during which time there was no movement of the bowels nor passage of flatus. On admission, the abdomen was distended and tympanitic to percussion. The child complained of pain on both sides of the lower abdomen, and there was tenderness in the iliac fossæ, especially the left. On the left side of the abdomen, immediately below the umbilicus, there was some rigidity, and, at this point, there appeared to be a mass about the size of an egg. Laparotomy was performed at once. The peritoneum was injected, and there was a large amount of seropurulent fluid present. The appendix, almost twice its normal size, was removed. On the left side was a large mass consisting of the diverticulum, adherent omentum and several coils of small intestine. The diverticulum was 2½ inches long, and at its middle was a perforation the size of a pea. The bowel was resected, and an end to end anastomosis done, with Murphy button. The button was passed on the ninth day. The patient made an uneventful recovery.

Dr. H. C. Deaver said that he had operated upon the case reported by Dr. Woody, and that it presented the symptoms of appendicitis with spreading peritonitis, and was so diagnosed. When he opened the abdomen he found a seropurulent fluid escaping. The appendix was twice the normal size. Dr. Deaver could not account for the fluid. There was no perforation of the appendix, and not sufficient disease of the wall to contaminate the peritoneal cavity. He removed the appendix and examined the region where the boy had complained of a great deal of pain. He delivered a mass of omentum and small intestine; there was some fecal matter in this mass, which escaped during the manipulation. The wall of the intestine was narrow at both the proximal and distal side of the diverticulum. The diverticulum was removed flush with the wall of the intestine and the opening closed with Lembert sutures. After invagination the intestine was so narrowed that he was obliged to resect two inches of the gut. The diverticulum, of the same calibre as the intestine, was perforated at its end.

Dr. Deaver thought that the one thing favorable in this case was that the child had not been previously purged. If it had been, there would have been fecal extravasation, and the result might have been different.

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This was the second case of Meckel's diverticulum seen by Dr. Deaver. The first case was brought to him as one of intestinal obstruction. He operated and found the diverticulum constricted by a band at its base. He removed it, but the patient had extensive peritonitis and died the next day.

Dr. Deaver said that Miles Porter had collected 180 cases of Meckel's diverticulum, with about 40 per cent. of recoveries. The outlook depends largely upon the condition being recognized early and upon immediate operation. Most of the patients die of peritonitis if not operated upon early.

Dr. Nassau said that about ten days ago he had been sent for to see a patient with supposed typhoid perforation. The man was so very ill that Dr. Nassau declined to operate. This was the first case of suspected typhoid perforation in which he had ever refused to perform an operation; but the man's condition was so desperate that he felt that he was justified in refusing. The autopsy showed a large Meckel's diverticulum perforated by a typhoid ulcer.

Dr. John H. Gibbon referred to a case of general peritonitis caused by obstruction of the bowels due to a strangulated Meckel's diverticulum, which he reported in *The American Journal of Medical Sciences,* November, 1903. It is impossible to make a diagnosis of inflamed or strangulated Meckel's diverticulum; the symptoms indicating operation are those of obstruction or peritonitis. He had also seen two other Meckel's diverticula in cases he had operated upon for other conditions; one of these diverticula he removed.

MULTIPLE PUNCTURED WOUNDS OF THE BOWEL.

Dr. John H. Jopson reported a case of multiple wounds of the stomach and intestine in a boy of five years, produced by the explosion of a cap used for firing dynamite cartridges. Five very small and thin fragments of the composition metal covering of the cap had penetrated the clothing and abdominal wall. Operation was performed within a few hours of the accident at the Bryn Mawr Hospital. There were four punctures of the bowel produced by two of the fragments, and a laceration of the stomach wall, oblique but not penetrating the mucous membrane, caused by a third. One piece had lodged in the liver, the edge of which was also lacerated by the fragment lodging in the stomach. One fragment of metal could not be traced. The wounds of the

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stomach and intestine were closed by double Lembert, or purse-string and Lembert, sutures of silk, and the wounds in the liver whipped over with fine catgut. The abdomen was closed without drainage. The patient made a good recovery. Much of the success of the operation was due to the skill and judgment of the anesthetist, Dr. McLeod, which permitted prolongation of the operation sufficiently to thoroughly explore the abdomen and repair all lesions.

DR. JOPSON read a further report upon

A CASE OF STRICTURE OF THE ESOPHAGUS UPON WHOM GASTROSTOMY WAS PERFORMED SIX YEARS AGO.

Six years ago he presented before this Society a little girl of four years, upon whom the operation of gastrostomy had been performed for stricture of the esophagus, due to the swallowing of lye. After the operation she left the hospital and returned to her home, with a fistula remaining, through which she received all her nourishment. She passed from under observation completely, and he did not see her again until December, 1905, and had not heard from her for several years. He was much interested in examining her at this time, and thought it worth while to report her condition to the Society.

The esophagus is absolutely impermeable to food or liquids, both of which are administered entirely through the gastric fistula. She appears in excellent health, and her development is in every way normal for a child of her age. The operation was the old-fashioned gastrostomy in two stages, and she formerly wore a belt with an inflated rubber pad over the fistulous opening to prevent leaking, which is usually an annoying feature in these cases. The modern operations, especially the Witzel, Kader and Frank, obviate this more or less perfectly. In this case she is not now annoyed in this manner. She wears continually a large rubber tube in the opening, which is considerably dilated over its former size. A little gauze is tied to the tube, close to the abdominal wall, to prevent it slipping in too far. The tube is carried up under the clothing to the patient's neck, bent on itself when not in use, and fastened by a string. She takes into her stomach a variety of liquid foods, including many eggs, and also gratifies her appetite and varies her tastes by masticating meats and other solid foods, which are afterwards expectorated, and not ingested. The manner of feeding is decidedly interesting, perhaps unique,

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and he had an opportunity of seeing her consume a glass of milk in the presence of the Fourth Year Class at the University of Pennsylvania. She takes everything into her mouth before passing it into the fistula. When drinking milk she holds the glass and takes about three swallows, the milk passing down into the esophagus, apparently as far as the stricture. This quantity, approximately two ounces, she then injects into the tube by placing the tube to her mouth and regurgitating into it. By three or four of these maneuvers she empties an ordinary glass of milk with much gusto and apparent satisfaction.

No instrumental examination of the stricture was attempted. It was suggested to her father that an operation might relieve her, retrograde dilatation of the esophagus being in mind. He understood very well the possible dangers of the operation, and having in consideration her present state of comfort and good health said that he had decided to allow her to grow up as she is until she reached the age of discretion, when she could decide the question of operation and its possible dangers for herself.

Dr. John B. Deaver said that he had done a number of gastrostomies in the adult, but only one in a child. The patient made an uninterrupted recovery. A case somewhat similar to Dr. Jopson's came under Dr. Deaver's notice. The patient had swallowed lye. Dr. Deaver referred the case to Abbe, who operated successfully by the string method, previously doing a gastrostomy. The child recovered.

Dr. Wharton said that a few years ago he had a very satisfactory case of gastrostomy for stricture of the esophagus following the swallowing of lye. All the cases of stricture of the esophagus in children which have come under his observation, except one, have resulted from this cause. He was impressed with the fact that it is a very common cause of stricture by looking over the statistics of the hospitals in Sweden and Norway, in which many cases of stricture of the esophagus are admitted. The people do not use the ordinary soap, but use lye for cleansing purposes. The latter resembles milk and the children are likely to drink it by mistake.

The case referred to was a colored boy, four or five years of age, admitted with a tight stricture. He was under treatment for several weeks, and became so much emaciated that operation had to be undertaken. Dr. Wharton did an ordinary gastrostomy, and the patient was fed through the gastric fistula. Later by

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means of retrograde dilatation through the fistula the stricture was dilated enough to admit the passage of a fair-sized instrument by the mouth. The gastric fistula was afterwards closed, and the boy left the hospital in good condition. This autumn, five years after the operation, he was admitted to the hospital suffering with some other trouble; and it was found that he could take all kinds of food with perfect ease.

Dr. Jopson said that it had been his fortune to see four gastrostomies at the Children's Hospital. Two were the simple establishing of gastric fistulæ; another was a Witzel operation, and the fourth was the case mentioned by Dr. Wharton.

REPORT OF A CASE OF INTUSSUSCEPTION: OPERATION, AND DEATH ON THE FOLLOWING DAY.

Dr. Jopson reported the following fatal case of intussusception incidental to the discussion of that subject and in connection with Dr. Giffin's series:—

David C., eight months, white, was admitted to the Children's Hospital April 20, 1905. The family and previous history were unobtainable. He had been sick for two days, during which time there had been absolute obstruction of the bowels, as shown by the absence of fecal movements, but passages of blood and mucus. There was frequent vomiting, inability to retain any nourishment, and constant crying out as if in pain.

When examined on admission he was quiet, the temperature was 100⅗°F., pulse 132 and irregular, respirations 52. Examination of the lungs negative. The abdomen was slightly distended, the muscles not rigid. In the left lower quadrant a sausage-shaped tumor was easily palpable, and could be traced thence upward and across the abdomen to the median line. Rectal examination detected the lower end of this mass, which could be also outlined bi-manually. The examining finger was stained with blood and mucus. In the short time the child was in the hospital before operation, there was no bowel movement, except bloody mucus. There was occasional regurgitation of fluid taken, and the vomitus had a suspicion of fecal odor.

Operation the same evening, a few hours after admission, under chloroform. Median incision disclosed an intussusception, ileocecal in type, and extending through the large bowel to the pelvis. The affected bowel was deeply congested and the peritoneum stripped under manipulation. Reduction was very difficult, not possible by distal compression alone, some traction

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being required. After reduction the abdomen was flushed with hot saline solution, and closed without drainage. The patient was much shocked. At 9 P.M. the temperature was 104⅜°F., the respirations 80, and the pulse could not be counted. He reacted somewhat, had a quiet night, and seemed improved, although the pulse remained rapid and the temperature high. Some nourishment was taken by the mouth the next morning without exciting vomiting, but the patient became suddenly worse and died at 11 A.M. No autopsy was permitted. Death apparently from exhaustion.

A review of the case shows a typical clinical picture of intussusception of some standing, with none of the important diagnostic features wanting. An acute obstruction of the bowel, with vomiting and tenesmus; a mucous and bloody discharge from the rectum; an abdominal tumor, easily palpable, and the detection of the same per rectum, all made the diagnosis an undoubted one. Unfortunately, the case came under observation too late to admit of anything but giving the child one forlorn chance by operation.

INTUSSUSCEPTION.

DR. H. Z. GIFFIN gave abstracts of 11 cases of intussusception occurring at the Children's Hospital from January, 1897, to the present time. In conclusion he said that some of the notable features in this series of cases were as follows:—

First, that pain was not a severe nor a constant symptom. Most of the children seemed quite comfortable upon admission. Pain, often paroxysmal, was present the first day, but not afterwards.

Secondly, the effect of the obstruction upon the general condition was not as marked as might have been expected. The children did not seem to be severely shocked, nor was the distorted expression the rule. In one case this fact seemed to lead to a mistaken diagnosis.

There were twelve fecal movements during the course of one case. Four-fifths of the cases were preceded by irregularity of the bowels. In all but one case the tumor was palpable. In only 2 cases was the vomitus fecal.

Reduction by hydrostatic pressure was attempted in all instances and was successful in 3 cases. Seven cases were operated upon and recovery resulted in only one. This case was operated upon on the second day. The unsuccessful cases were operated upon much later.

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These results would lead to the opinion that hydrostatic pressure should still be given a careful trial; but after it has clearly failed once it is fatal to wait. Unless the cases come into the hands of the surgeon early, we can be almost sure of an unsuccessful termination. The high mortality in the cases operated upon was due in part to the misguided delay of those concerned in sending them to the hospital.

CASE OF INTUSSUSCEPTION IN A CHILD OF SIX MONTHS; OPERATION; RECOVERY.

(A full report of this case will be found among the "Papers" in this volume on page 26.)

Dr. John B. Deaver said that he was much interested in the class of cases reported. He had had some experience with this condition, which corresponds with the experience of the surgeons whose names had been mentioned. He agreed with the remarks of all the gentlemen that an enema should be resorted to before operating, but with the understanding that should it fail, operation is to be done. If the enema does not at first bring about relief it should be again tried.

Dr. Deaver questioned the advisability of much manipulating of the tumor in intussusception, as well as that of taxis in cases of strangulated hernia. While one cannot say that it must not be resorted to, Dr. Deaver believed that it would in general be better if such cases were handled as little as possible before the abdomen is opened. His experience was that these cases are frequently confounded with appendicitis. There is persistent vomiting, which comparatively few cases of appendicitis have, however; later on fecal vomiting, rare in appendicitis until the disease is far advanced. The presence of diarrhea, blood and mucus should suggest a rectal examination.

As to the resistance of children to operative interference, Dr. Deaver's experience was that in prolonged operations children suffer from immediate shock more than adults, but that in short operations there is little effect. Children are more capable of resisting sepsis than are adults, and more children get well from serious conditions than adults. In 100 cases of appendicitis (many of which were of the most virulent type) in children, occurring in the Children's Hospital of the Mary J. Drexel Home last year, there were only three deaths. Dr. Deaver felt certain that such a low mortality would not be possible in an equal number of similar cases in adults.

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DR. THOMAS R. NEILSON said that he had had 2 or 3 cases of intussusception in children. One, an infant, was dying when seen; one was operated on and got well.

Dr. Neilson fully agreed with Dr. Deaver in believing that in children with desperate abdominal conditions, if what is to be done can be done quickly, the child will bear the operation relatively well; but that if the conditions demand more time, the child will not bear it so well. Of course, the subject under discussion, said Dr. Neilson, is one that relates to an extremely grave condition, and the results must always be grave. Therefore, the statistics will never be favorable. Dr. Neilson thought that the figures given would represent a good average.

DR. J. P. CROZER GRIFFITH said that there is, in his opinion, almost no medical side to the subject of intussusception. He feels convinced that the safest thing is to operate just as early as possible. Of course, the effort to relieve the symptoms by using a certain amount of pressure with water or air should be made, but this should be done cautiously and the effort not long continued. He wished to confirm Dr. Giffin's mention of the frequent absence of pain. This is opposed to the descriptions in textbooks. The majority of the cases seen by him have had anything but the classical symptoms, so that it was often difficult to make a diagnosis, so far as pain and the impress upon the system are concerned.

DR. LOWENBURG said that the question of diagnosis is always interesting to the medical man, because he usually sees these cases first. A short time ago he saw a case of intussusception that had been mistaken for dysentery. At four o'clock in the morning the last fecal movement had occurred, and at six there appeared a discharge of blood and mucus. The child grew worse, and at nine o'clock that night Dr. Lowenburg was called in. There was very little shock. The temperature was 101°F. There was a discharge of bloody mucus, but no vomiting. A tumor was found in the left iliac region, extending up along the descending colon; examination by rectum confirmed the presence of this tumor. Immediate laparotomy was advised, and the child was operated on two hours after Dr. Lowenburg had first seen it. A typical ileocecal intussusception was found, and the tumor easily reduced, but the child was much shocked and died the next day. Dr. Lowenburg thought that the most important symptom in this condition is the presence of blood and mucus without fecal matter,

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and especially in a breast-fed child these symptoms should lead one to suspect intussusception.

Dr. D. J. Milton Miller said that Dr. Giffin had omitted one case, an infant of four months that came into the hospital last fall, with symptoms of intussusception. The child was given an irrigation, and all the symptoms, except the tumor, subsided. Dr. Wharton saw the patient the next day with Dr. Miller. The child was then quite comfortable, but had had no movements. The tumor was palpable as a mass about two inches in length, a little to the left of the navel; but the next day it had gone. The intussusception had evidently reduced itself, as the child was quite well, and normal bowel movements had appeared.

Dr. Miller endorsed the opinion that there is no medical side to this condition. He believes that the sooner the profession realizes that intussusception belongs in the same class with appendicitis and perforation in typhoid, the better it will be for the patients.

Dr. John H. Jopson agreed with the other speakers in regard to the difficulty of making a correct diagnosis in many cases of intussusception. Erdmann, who has had great experience, lays stress upon the fact that tumor was absent in more than half the cases, and that mucus and blood were the most characteristic symptoms.

Some authors regard intussusception as a surgical condition only, while others think an enema should be tried once. Dr. Jopson thinks that an enema should be resorted to only once, if at all. The difficulty is to know when reduction has been accomplished. Dr. Graham reported a case in which this had apparently been accomplished; but the symptoms returned, and operation was then followed by death. Reduction is sometimes impossible, owing to adhesions in the late stages. The cases in which reduction is the most difficult are those with the highest mortality. The mortality of resection of any portion of the intestines in infants is tremendous.

THE TREATMENT OF DIFFUSE AND GENERAL PERITONITIS WITH SPECIAL REFERENCE TO THE MURPHY METHOD.

Dr. John H. Gibbon spoke of the three methods of treating general peritonitis, the non-operative, the opening of the abdomen and thoroughly irrigating the whole cavity, and the method of simple drainage. It was the latter method which he

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strongly endorsed. Murphy has been the strong advocate of this method and it is his techique which is recommended.

Dr. Gibbon thought that the reason the irrigation method is often a failure is because it was not carried out completely, but he was now convinced that the results from irrigation do not compare with those of simple drainage. Murphy made the statement in October that he had had 29 cases of diffuse or general peritonitis, in which he had employed his method, with but a single death occurring from pneumonia on the sixth day. These figures without further statement at once challenge attention.

The treatment consists in making a small opening in the abdomen, closing the perforation or removing the appendix as the case may be, the introduction of a large drainage tube into the pelvis, placing the patient in a semi-sitting posture of from 35 to 45 °, and the administration of a quart of salt solution every two hours by the rectum. It will be observed that the treatment is very simple, and yet it constitutes practically everything that Murphy did in his 29 cases. He states:—

"It is a fatal mistake to mop, wash, or handle the intestines or peritoneum. Then, too, the simple opening of the abdomen relieves the pressure under which the pus rests and we know all that is necessary to stop absorption from a pus accumulation in any part of the body is to open the cavity and relieve the pressure. It is injurious and even dangerous to 'milk or handle' an acute abscess; it is doubly so to handle an infected peritoneum, but the pressure should be relieved by opening it, allowing it to drain and exposing the anaerobic flora to the air."

The only change Dr. Gibbon had made in his cases is that he has used gauze drainage instead of tube drainage, and that he had not only drained the pelvis but also the seat of the primary trouble, the appendix region, for instance.

Care should be exercised to do no more manipulating than is absolutely necessary to remove the cause of the peritonitis and drain the abdomen. Speed without haste is most essential. Two important points in the after-treatment are the Fowler position, and it must be remembered that elevation of the head of the bed does not produce this position, but that the patient must be raised by pillows or a bedrest into a semi-sitting posture, and the introduction of large quantities of salt solution into the rectum. If the bag is only raised 18 inches from the bed and the tube kept continually in the rectum, the fluid will flow in slowly and

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will be absorbed. It is remarkable how much fluid can be absorbed when introduced in this way.

Dr. Gibbon stated that between July 1, 1905, and February 1, 1906, he had had 8 cases of diffuse and general peritonitis, in all of which he had practised more or less rigidly the Murphy treatment. He was careful to exclude 10 cases of perforation of the appendix with localized peritonitis occurring in the same period, in which there was but one death occurring several weeks after the operation, due to pulmonary phthisis. These cases were also treated by the Murphy method but cannot be classed as cases of general peritonitis. The appendix was removed in every case in both series. During this period the operation was refused in no case of general peritonitis because of its far advanced condition.

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In the series of 8 cases of diffuse or general peritonitis there were three deaths; one occurred in a case of typhoid perforation, the operation being done thirty hours after perforation, permission to operate being denied by the parents up to this time. The patient died the following day. The other two deaths occurred in cases of general peritonitis due to perforation of the appendix. Gibbon was convinced, however, that no other form of treatment could have saved them. One of these patients was profoundly septic and the veins of the mesoappendix were thrombosed; when the mesoappendix was cut the veins could be seen distended with clot. Three days after the operation this patient had not had a bad symptom and gave every prospect of recovery, but on the fifth day he suddenly complained of pain in the abdomen, difficulty in breathing, and his pulse shot up to 140. A pulmonary embolism was thought of, but his condition improved and he did not die until the next morning. No postmortem was allowed. Dr. Gibbon was of the opinion that this death was due to septic embolism. The other patient at the time of his admission had a general peritonitis and was markedly septic. This operation took but eight minutes and the patient died twelve hours later. The remaining 5 of the 8 cases recovered without interruption. There were 4 cases of general peritonitis due to perforated appendix and one case of perforated gastric ulcer. The latter case was operated on four hours after the perforation and the peritoneum, though soiled with gastric contents, down to the pelvis, was not in the septic condition of the other patients. Five recoveries out of 8 cases do not seem very encouraging, but if

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the three fatal cases are carefully considered, it will be seen that they were in desperate condition at the time of operation.

Dr. Gibbon then detailed a case of general peritonitis occurring in a child which recovered. He stated that children respond better to treatment in this condition than do adults.

The use of saline laxatives was condemned very strongly in the treatment of general peritonitis. What are required in such cases are drainage and the lessening of peristalsis by the withholding of food and laxatives. The use of saline laxatives in such cases only churns up the septic material and tends to spread the peritonitis.

Dr. John B. Deaver said that he had listened with great pleasure to his friend Dr. Gibbon. While Dr. Deaver could not always agree with Dr. Gibbon, he could in this instance. He considered Dr. Gibbon thoroughly correct in every position taken by him in his paper. Dr. Deaver had long ceased to resort to irrigation. He had practised various methods of treatment in peritonitis, and had even used peroxid of hydrogen after the manner of Morris; general irrigation, evisceration, the wiping off of lymph, etc. For several years it has been his custom to avoid irrigation, and he has had satisfactory results without its use.

Dr. Deaver thought that one must differentiate between diffuse and general peritonitis. In the latter the mortality is large (40 to 50 per cent.), but in diffuse peritonitis it is comparatively small. He believed that the minimum amount of surgery consistent with the pathological condition should be the aim. A number of visitors once witnessed Dr. Deaver operating in this condition. When he had finished, they asked whether he was not going to do anything more; and he replied that masterly inactivity counts in these cases. He merely cocainizes the abdomen, makes an incision and introduces a drainage-tube in some cases, and the patients so treated have recovered.

In regard to posture, Murphy has his cases transported to the hospital in the sitting position. Dr. Deaver recalled a case shown to him by Dr. Murphy in the hospital where he worked. The patient, a man, was desperately ill. The man was brought to the hospital in the sitting position and operated upon in that position, and was kept in that position until he recovered; and he was rapidly recovering when seen by Dr. Deaver.

The success of these cases, like those of intussusception, depends upon the stage at which the operation is done. The earlier

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it is performed, the better the results. It also depends on the character of the infection. In the few cases of peritonitis in which Dr. Deaver has had the bacteria investigated, the infection has been found to be streptococcic in a few, but the colon bacillus in the majority of cases. Handling as little as possible is also most important. Dr. Price once went to see Dr. Deaver operate on a case of diffuse peritonitis. He opened the abdomen and commenced to introduce gauze. He then put in a drainage tube. Dr. Price had said nothing, but he then remarked: "If it had been my case, I should have irrigated." Dr. Deaver replied: "I get the patients well without irrigating, but you get them well with." The patient recovered.

Dr. Deaver believed that many fatalities in such cases are due to the use of purgatives. If one did not use purgatives, but employed the knife, the results would be better. In his book, Dr. Deaver took strong exception, at first, to this opinion; but in the last edition he has taken the opposite view, because he has seen the ill effects of their use. He also thinks previous purgation increases the mortality in appendicitis operations in children, as well as in adults.

Dr. Deaver also agreed with Dr. Gibbon that the Ochsner treatment is good in a certain class of cases of peritonitis. It is difficult to practise lavage in children, but not in adults. The cases that get well with this treatment would probably have recovered if nothing had been done at all. The sitting position is most valuable. This fact was brought out by the illustrious surgeon that recently lost his life through a late operation for appendicitis.

Dr. H. C. Deaver said that he wished to report an instance that occurred last year, which showed the results of free purgation in appendicitis. The child was taken ill on Friday. The following day it went out and played. That same night there was severe pain. The family physician gave a hypodermic of morphia and followed this with a bottle of citrate of magnesia. The child was brought to the hospital with a marked peritonitis. Dr. Deaver operated and found the abdomen full of liquid feces. He thought that it must be a case of typhoid perforation, but when the appendix was exposed a perforation was found through which the feces were flowing into the free peritoneal cavity.

Dr. Deaver thought that appendicitis cases associated with diffuse peritonitis should not be purged. One should either wait

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for the peritonitis to subside, or simply make a small incision and establish drainage, preferably the latter.

Dr. Deaver recently operated upon a patient presenting abdominal symptoms similar to the class of cases mentioned by Dr. Gibbon. The man was desperately ill, and was not kept on the table more than five minutes. A small incision was made, and about two quarts of pus removed. The patient steadily improved, and ten days later Dr. Deaver reopened the abdomen and found an appendix perforated at its base. He removed it, and the patient recovered.

Dr. Wharton agreed with Dr. Gibbon regarding the lessened mortality in children in cases of diffuse peritonitis. For some years he practised very thorough irrigation after opening the abdomen and removing the appendix in such cases. A certain number of the patients recovered, but some died. He then laid great stress upon the value of irrigation, but at present he feels inclined to change his views, and he has recently practised the method of Murphy in not making extensive exploration in cases in which pus has been found and the appendix removed. He employs drainage by tube and gauze.

He thinks that the most valuable point in the Murphy method of treatment is that of the position of the patient. In children he has found that the instillation of salt-solution by the rectum was not well borne when the tube was kept in and the salt-solution allowed to enter constantly; so he prefers to give it by enema in small quantities and frequently.

Dr. Wharton was very glad to hear Dr. Gibbon and Dr. Deaver advise against the use of purgatives in appendicitis; for he has felt that much damage is done in the early stages of peritonitis by the free use of purgatives. In almost every case seen, the physician states that he has given free purgatives, starting with calomel and following it with salines. Dr. Wharton has felt that this is dangerous and accomplishes very little good.

Dr. Neilson was glad to have had the pleasure of hearing Dr. Gibbon's paper, and to have had the opportunity of affirming his belief in the advantages of the so-called Murphy method of dealing with cases. Children do decidedly better than adults; and Dr. Neilson believed firmly that the great advantage in the Murphy method consists in noninterference beyond what is absolutely necessary.

As to the question of drainage, Dr. Neilson disagreed with

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Dr. Gibbon, believing that when pus is present in considerable quantity the drainage tube is preferable to gauze. In regard to the matter of rectal irrigation in children, he thinks that they will often bear it badly. It annoys and vexes them, and this must be taken into consideration. If the treatment causes annoyance to a child, it will contribute to the nonsuccess of the operation.

Dr. Neilson believed, like Dr. Wharton, in occasional small enemata of normal salt solution. As to purgation in the presence of acute appendicitis, he follows the teaching of others with large experience in believing that it is a source of great danger, and should be avoided when one believes that he has to deal with acute infection.

Dr. Miller was glad he had come to the meeting, because he had learned that surgical practice swings to and fro, as well as medical. Dr. Deaver is now teaching the opposite to what he did ten years ago. Surgeons upbraided medical men then for not purging the patients in appendicitis (except a few conservative men, who were considered very old-fashioned), and now they tell us that it is the worst thing one can do.

Dr. Hand said that there is a small group of cases of acute general peritonitis which will do badly, no matter what is done. In this group there is a pneumococcus-infection, and it is extremely difficult to say whether the abdominal symptoms of pain and distension are such as often occur in uncomplicated pneumonia or are due to a peritonitis. In two such cases which came to autopsy there were present fibrinous pleuropneumonia, fibrinous pericarditis with a moderate amount of fluid, and a large purulent effusion in the peritoneal cavity with some lymph. Such cases will undoubtedly be fatal, whether treated medically or surgically.

Dr. Gibbon, in closing the discussion, said that he preferred the use of gauze drains, and that he usually puts them in moistened with salt solution. Where there is not a large amount of liquid pus the wound is dressed with a large moist dressing and covered with gutta-percha tissue in order to establish an early drainage. He has found that this method works well in cases of diffuse peritonitis where drainage is not free and in which there is distension of the abdomen and evidences of extension of peritonitis. He is sure that in 1 or 2 cases he was able to re-establish drainage and probably arrest the progress of the disease. In giving the large amounts of salt solution by the rectum the fluid must be allowed to flow in very slowly and gradually.

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THE PHILADELPHIA PEDIATRIC SOCIETY.

Stated Meeting, Tuesday, March 13, 1906.

ALFRED HAND, JR., M.D., PRESIDENT.

AN ANOMALOUS BLOOD-VESSEL VISIBLE ON THE WALL OF THE PHARYNX.

DR. WILLIAM N. BRADLEY presented this patient, a boy of seven years. On examination to determine the cause of a reflex cough, he found a pulsating blood-vessel, about the size of an ordinary slate pencil, on the post-lateral wall of the pharynx, and noted its presence on either side.

When the throat is under control the pulsation is very pronounced, the artery even projecting somewhat into the pharynx, and the course of the vessel may be imperfectly defined.

That there is an anomalous arterial condition present is probable, but it is equally true that it would be a difficult matter to say with certainty the exact arterial arrangement.

Dr. George B. Wood reported 2 cases of this anomaly in September, 1902. In each case the pulsation occurred on the right side only.

Dr. Wood, after reviewing the subject, states that the pulsating vessel is the common carotid continuing as the internal carotid, with the absence of the external carotid, and giving off branches usually derived from the external carotid.

This view is strengthened by references from Deaver, Morris and Quain, who all agree that such an anomaly does occasionally occur.

The artery here present Dr. Bradley thought too large for the ascending pharyngeal, and, although Green, of Dublin, has found two, and sometimes three, present, he would be inclined to argue that in such cases the calibre of those vessels would be found to be smaller than if only one were present. Hence, I think we are justified in ruling out the ascending pharyngeal artery in this instance.

The clinical significance of the case, of course, is to be found in the liability to injury:—

First.—In operations in the region of the pharyngeal wall or

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vault, including retropharyngeal abscess, peritonsillar abscess, and, particularly, removal of adenoids by an unskilled operator.

Second.—Accidental penetration by foreign bodies.

The case is of interest as serving to impress on one's mind the fact, that such anomalies do sometimes occur and should be watched for to avoid trouble.

Dr. R. S. Lavenson (by invitation) presented a patient with

INFANTILISM.

The patient is a female child, six years and nine months of age, showing the physical characteristics of a child of approximately eighteen months. The mother is healthy; the father has some obscure nervous disease and is probably alcoholic. The child was healthy until four months of age, when it was said to have marasmus. It is 31 inches in height, and weighs 22 pounds. It can neither stand nor walk. It says a few words, but unintelligibly, and pays no attention to bodily functions. It cannot name any of the simpler objects with which it comes in contact, but shows decided likes and dislikes in regard to its food and surroundings.

The history indicates that the child has been underfed since shortly after its birth, the mother being compelled to go out to work, and to leave the child from morning until evening with a glass of milk for it to take as best it could manage. Since being in the Home for Incurables the child has improved slightly physically, and mentally to a marvellous degree.

Dr. D. J. Milton Miller said that, while looking over a copy of the Clinical Studies of Bramwell, a book rich with illustrations of all sorts of cases, he had seen quite a number of pictures of cases of infantilism in persons of from eighteen to twenty years of age. All were typical instances of the condition; that is, all were sexually immature. In several, this was associated with chronic diarrhea. Three of the patients had had this practically all their lives. They improved wonderfully on the administration of pancreatin, developing not only in their limbs and mentally, but also in their genital organs.

While long-standing diarrhea and exhausting diseases are, probably, not the only, it is evident that they are in many cases the underlying, condition. He considered the case shown to be undoubtedly one of infantilism, which, if it had been allowed to

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go on without receiving treatment, would probably have caused the patient, on reaching the age of puberty, to fail in developing sexually. The cases of Bramwell all improved under treatment with pancreatin; so much so, that he considered long-standing diarrhea a very common cause of the condition. In Bramwell's cases there was fat in the stools. He believed there was a special form of infantilism due to some deficiency in the pancreas itself. Ordinary cases of marasmus all recover entirely, unless the patients die; they grow up to be perfectly normal individuals.

Dr. S. McC. Hamill said that Dr. Lavenson had referred to the inhuman treatment that the baby had received before coming to the Home, it having been placed in a chair and left alone in its home from morning until night. Dr. Hamill was inclined to agree with Dr. Burr regarding the etiology of the condition in so far as he went (Dr. Burr had ascribed it to chronic starvation), but he felt that the mental impression made upon this child by the horror of its inhuman treatment must at least play a contributing rôle. The two conditions together should surely produce some serious mental and physical defects.

Dr. Alexander H. Davisson said that it would be interesting to know how the child was fed while at its home. He thought it probable that tea and alcohol were among the articles of food given it. These have the effect of hindering the child's development. This patient, being a prisoner, could not get those fatty foods that would have prevented it getting into the condition it did, and tea and alcohol were probably used in their place.

Dr. Theodore Le Boutillier said that he happens to have under his care a child of two years that is very small for its age. It weighs but 13 pounds. It has had digestive disturbances from birth, and has been badly fed. Its arrested development seems to be entirely the result of malnutrition.

Dr. Alfred Hand thought that the etiology might lie in the treatment received by the child before it entered the world, but he did not know whether this question had been investigated very carefully. Dr. Hand said that he had shown to the Society during past years 2 cases, one a cretinoid idiot with no very distinct signs of cretinism, and the other a microcephalic idiot, and that in both cases there was a history of the unsuccessful use of an abortifacient. The mentality in the case exhibited by Dr. Lavenson is

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far superior to that in Dr. Hand's cases, so it may be that the effect of the drugs would not apply in this particular instance; but the infantilism might be dependent upon some disturbance in the development of the fetus.

DR. GEORGE W. NORRIS read a paper on

THE RELATIVE FREQUENCY OF HEART DISEASE IN CHILDREN IN DIFFERENT COUNTRIES.

(This paper will be found in full among the "Papers" in this volume on page 37.)

DR. LE BOUTILLIER reported a case of

CHRONIC LEUKEMIA.

(This paper will be found in full among the "Papers" in this volume on page 40.)

DR. MILLER asked whether Dr. Le Boutillier had said anything about treatment. He had nothing to say about leukemia in children, but wished to state that for the last two or three years he has had under observation 3 cases of leukemia that had been treated with the X-ray. Two are splenic cases. They have repeatedly improved under this treatment, but have always relapsed. Although both patients are still alive, they are not at all well. Dr. Miller saw one of the cases yesterday. This woman has been under treatment for three years, with alternating periods of pronounced improvement, followed by equally marked relapses. Her spleen has lately increased enormously in size, filling more than two-thirds of the abdomen. When she first came under treatment she weighed only 96 pounds, with enormous spleen and 25 per cent. myelocytes. After two months X-ray she weighed 150 pounds, and had no myelocytes; but the improvement was not permanent. The third case is one of lymphatic leukemia. The blood of this patient was examined recently for the first time in seven months. It was normal, and had evidently been so for six months. The usual history is that the X-ray improvement is not a permanent one in most cases of leukemia; but this lymphatic case has apparently been cured by it. Dr. Miller believed that there were few instances of such a result.

DR. LE BOUTILLIER said that the reason he had not mentioned the treatment was that it had done no good in checking the dis-

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ease. The X-ray was considered, but there was no opportunity to use it at the hospital, and the parents would not consent to the child going anywhere else for treatment.

DR. HERBERT FOX and DR. R. S. LAVENSON (by invitation) reported a case of

PNEUMONITIS IN AN INFANT FOUR DAYS OLD DUE TO THE BACTERIUM MUCOSUM CAPSULATUM.

This is the case of a child born in the service of Dr. Hirst at the Maternity of the University Hospital, which developed the signs of an infection within forty-eight hours after birth; during the next two days there was an intermittent fever and death ensued on the fourth day of life.

At autopsy many hemorrhagic areas into the serous membranes were found and some into the mucous membranes; a catarrhal pneumonia, the exudate of which took on a decidedly hemorrhagic character at numerous points; cloudy swelling of the kidneys; fatty infiltration of the liver and numerous epithelial rests in the thymus body.

From the lungs, heart and blood the bacterium mucosum capsulatum was isolated in pure culture and from the liver beside the above the B. Coli was obtained. The isolated organism was of high virulence, being able to kill guinea pigs in twenty hours at the first trial and twenty-four hours at a second. Upon further saphrophytic growth the bacterium changed its biologic characteristics. It belongs to the group designated "Bacterium Aerogenes" by Perkins.

When injected into animals this organism produced the same pathologic picture that was seen in the lung of the child; this was especially true of the lungs and kidneys; there were no serous hemorrhages in the animals.

DR. HAMILL said he was glad there had been another microorganism added to the group producing the numerous infections in the newborn. This further confirms his belief that such cases are dependent upon a large number of different organisms, any one of which may give rise to a train of symptoms that is common to all.

The diagnosis of inspiration pneumonia in the newborn is common. A number of years ago, through the kindness of Dr. R. C. Norris, Dr. Hamill obtained the privilege of making autop-

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sies on the infants dying at the Preston Retreat. In the first autopsied case in which all of the symptoms of inspiration pneumonia had been present, an extensive hemorrhage into the suprarenal capsule and some slight hemorrhages into the intestinal and gastric mucosa were found. There were a few superficial hemorrhages elsewhere, also; but the lungs were absolutely free. In studying later cases, Dr. Hamil came into contact with a number of cases with the same train of symptoms. These he was able to demonstrate to be cases of infection without lesions in the lung. Some had areas of congestion, but none, as the result of histological study, showed the presence of pneumonia.

Dr. J. H. McKee asked whether the baby had been born after difficult labor and whether there was any evidence of asphyxia at birth.

Dr. Lavenson replied that the child had been normally born; and that there was no evidence of asphyxia at birth, although there was slight hemorrhage. The presence of hemorrhage may suggest asphyxia, being common in that condition. They are then, however, most prominent in the thymus gland; while in this case there was no hemorrhage at all in the thymus, so that the suspicion of asphyxia may be ignored.

Dr. Fox said he wished to add that at the time the child died, or within a day or so afterward, two other cases, in very young infants, were diagnosed as pneumonia. Both these children exhibited the same clinical features as those in the child that died. Blood-cultures were taken of both, but the blood was found to be perfectly sterile. Both children recovered. There seems to have been a general infection, of a very virulent nature, in the first child, but somewhat decreased in virulence in the others—supposing them to have been of the same nature. It was impossible to obtain cultures from the nasal or bronchial mucosa.

Dr. Samuel McC. Hamill reported

A CASE OF STREPTOCOCCIC INFCTION IN THE NEWBORN.

Dr. Edsall said that, aside from the great interest of the fact that Dr. Hamill has been able to demonstrate the existence of a streptococcic infection in the newborn, with recovery, there is one point that should be emphasized—the great importance of using blood-cultures as a method of diagnosis in children and in-

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fants. He had grown almost to feel that this method of diagnosis is so customary as not to need a great deal of commendation; but, in conversation with a number of pediatrists, he had been surprised to find that many of them almost never used this method of diagnosis. In adult work, particularly, most modern clinicians have grown to feel great dependence upon blood-cultures as a method of diagnosis; and Dr. Edsall, whenever he becomes entangled in what appears to be an infectious case, immediately thinks of having a blood-culture made. Often in adults, and frequently in children, he has been able to make a diagnosis through the aid of the bacteriologist, when he could not have done so otherwise, and thinks it would have been difficult for anyone else to have done so. He does not believe that most persons appreciate the full value of this method of diagnosis, even yet. Pediatrists are not so prone to employ it as are those that deal with adults. It is, however, in infectious diseases in which the causative agent is recoverable by this means, the most certain method we have of reaching a correct diagnosis, and deserves to be frequently used with children.

Dr. Hamill said that the classification of the diseases of the newborn ought to be very much influenced by such work as that done by Drs. Lavenson and Fox. A study of many of these cases has made it clear that, clinically, there is no way of determining the type of infection from the symptoms. The infections by different organisms give rise to a very similar train of symptoms, so one must depend upon the results of blood cultures, or the autopsy findings, in order to obtain intelligent results.

Dr. Charles F. Judson read a paper on

INVESTIGATIONS INTO WHEY PROTEIDS.

(This paper will be found in full among the "Papers" in this volume on page 33.)

Dr. Miller said he had understood Dr. Judson to say that the amount of soluble casein and of lactalbumin in whey are in a constant proportion, and asked whether this does not differ from almost all other analyses. At the meeting at which Dr. Chapin had read his paper, he gave as his objection to the use of whey that the casein and the lactalbumin are not in constant proportion. This objection Dr. Miller considers untenable. Van Slyke, in his paper, raises the same objection, saying that the

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experiments at the New York Agricultural Station, he thought, have shown that the commonly accepted belief that the proportion is 5:1 is incorrect; as his experiments have demonstrated that it is anywhere from 2.6:1 up to 5.6:1. Dr. Miller thinks that this does not make any difference in the usefulness of whey in infant-feeding. It is often the only means of saving the lives of some infants, and is one of our most valuable resources. The proportion of albumin in it is not so very important, because, after all, the great advantage of percentage-feeding is its convenience. It does not make any vital difference if the milk we think contains 3 per cent. of proteids really contains 4. What one must try to do is to get the proportion that the infant can digest, and work up from that; if the percentage one thinks one is giving is not found to agree, it can easily be altered to meet the indications, without affecting the principles upon which the system of percentage feeding rests.

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THE PHILADELPHIA PEDIATRIC SOCIETY.

Stated Meeting, Tuesday, April 10, 1906.

ALFRED HAND, JR., M.D., PRESIDENT.

FUNCTIONAL AND VENOUS MURMURS IN CHILDREN.

DR. SAMUEL McC. HAMILL presented ten children varying in age from twenty-two months to eleven years, in whom he was able to demonstrate the presence of functional heart murmurs. All but three of the children presented themselves at one of his dispensaries that morning.

He referred to the text-book views that these cases are uncommon, and then spoke of their great frequency, especially in children under four years of age.

These cases were presented to emphasize their frequency, to point out their peculiar characteristics and to demonstrate the great importance of differentiating these murmurs from those of organic origin.

Only one of the patients presented could be considered in perfectly normal condition: this was a vigorous-looking boy, large of frame, strong muscles and with good color. The others may have had mild anemia but, with one exception, they did not indicate it in their appearance.

DR. SCOTT said that some of the children show murmurs in the upright, and practically all of them in the prone position. Quite a number showed no murmurs to Dr. Scott's ear when sitting up. He expressed himself as being much interested to hear Dr. Hamill's views as to the probable cause. The time of all the murmurs seemed to be late in the systole, and all were soft and low-pitched. They seemed to Dr. Scott to be much louder during expiration than during inspiration. Murmurs of this type are not common in healthy adults, and Dr. Scott thinks that the cause must lie in the developmental condition of the child and the infant. He believes that the murmur might be explained by the pressure of the tippet of the lung upon the heart. He has noticed such murmurs in adults, very loud murmurs heard at the pulmonary cartilage, together with a loud diastolic shock. In such a recent case the postmortem showed an absolutely normal heart. Sometimes the presence of a pleuropericardial friction with a

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murmur that is supposedly endocardial will help one to reach the conclusion that the condition is exocardial.

Dr. Miller said that he had been able to hear the murmur in only a few of the children. He quite agreed with Dr. Hamill that functional murmurs are very frequent in children that are not quite up to the standard of health. He has not heard them in perfectly healthy children, and has never seen so large a group of apparently well children showing murmurs. In very young children, functional murmurs are common, particularly after acute illnesses. He has seen 2 such cases this winter. An infant of eighteen months, now under his care, has a loud, blowing murmur at the apex, occurring during and following acute severe bronchitis. He expects that this will disappear within a few weeks as the baby regains its former health. All the children shown to-night are apparently anemic, and, in other ways, do not appear to be in robust health. Anemia alone is not sufficient to explain the presence of the murmur in all the cases, as some of the children do not appear to be anemic. Some may be due to enlarged bronchial glands, a condition not uncommon in poorly nourished children. Many of the children, too, seem to have some of the stigmata of rickets. Cardiac murmurs are often met with in rickets, and are due in part to anemia, in part to the dilatation of the arteries, which is so common in that disease.

Dr. A. A. Eshner said that the fact that the murmurs occur so late in the systole suggests that they are due to something outside the blood-stream. If they were due to constriction in the course of a vessel they should be heard throughout the systole. Occurring so late in the systole it seems that the suggestion made by Dr. Scott is most plausible. At a certain stage of the heart-beat and of the movement of the lungs, the impact of the heart on the lung-tissue may give rise to a murmur like that demonstrated.

Dr. Norris said that a point made by Dr. Scott is generally overlooked; that is, the question of posture. It is generally admitted that all systolic murmurs are more intense in the recumbent position, or heard only during recumbency; and that they disappear or become faint when the individual is erect. The murmur of aortic regurgitation is less influenced by posture than is any other. One usually notices distinct changes in the amount and the relative accentuation of the second sounds at the base. Commonly there is more accentuation when the patient lies down;

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and sometimes there is reduplication, which there is not when the patient stands up. This is particularly noticeable at the pulmonary orifice. The pulmonary sound is more intense in the prone position. In making notes of heart cases, one should always state whether these murmurs are present, where they are present, and in which position they are most intense.

Dr. Hand said that he had had a case in private practice that had given him much anxiety to determine whether the murmur was functional or organic. The child had had scarlet fever and had to be kept in the house for four or five weeks. The temperature ranged from 98°F. to 99⅘°F. during nearly all the time he was in bed. Some time after the initial fever, this pulmonary systolic murmur appeared; and it persisted all through convalescence. This caused much anxiety, but when the patient was able to be out of doors and had reacted from the housing, the murmur disappeared entirely. Then Dr. Hand concluded that it must have been a hemic murmur probably due to the general relaxation of the arterial system caused by confinement in bed. There was probably some dilatation of the aorta, which, pressing upon the pulmonary artery, produced stenosis and gave rise to the murmur. If the murmur was organic, the recovery was certainly perfect.

Dr. Hamill, in closing, said he should like to repeat that he had not brought the patients before the Society as representative healthy children. The boy of eleven years was the only healthy child among them. He is unusually well developed, with hard, firm muscles, and his appearance is not anemic. He has a functional murmur.

As to the cause of such murmurs, a good many explanations have been offered; but Dr. Hamill does not believe any of them to be satisfactory. The one appealing to him most strongly is that the murmurs are dependent upon lowered tension in the pulmonary artery, causing a relative dilatation, which immediately produces the conditions essential to a murmur. If this be true, it seems to account for the marked frequency of these murmurs in early life. The arterial tension in childhood is lower than in adult life; consequently, one would expect that conditions tending to lower the arterial tension would make a more decided impression than in adults. One reason that the pressure in the pulmonary artery is more easily influenced than in the greater cir-

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culation is that there is less muscular tissue in the pulmonary artery. When heard in the aortic area, whether these murmurs are transmitted from the left to the right side, Dr. Hamill does not know; but he thinks that in such cases the murmur is dependent upon conditions in the aorta such as are found in the pulmonary artery. When the murmur is heard in the aortic area there is usually a wider distribution of all the murmurs. This Dr. Hamill attributes to a more marked and more general lowering of the arterial tension.

Dr. Scott had said that he could hear the murmur best during expiration and Dr. Hamill thinks that it is best heard at the end of expiration. Dr. Norris had probably not heard him say that these murmurs are always loudest in the recumbent posture and often only in this position. He had also stated that they are liable to come and go. In one of the cases shown this evening the murmur disappeared completely after a few minutes in the recumbent posture, only to return after exercise. Enlargements of the bronchial glands, unquestionably sometimes produce murmurs, but in Dr. Hamill's experience these murmurs are different in character from those heard in the class of cases he had described. Enlargements of the bronchial glands are not common enough to account for the frequent functional murmurs.

The chief point of value in recognizing these is to differentiate them from those of organic origin. A young woman of seventeen years, whom Dr. Hamill has had under his care since she was two years of age, had had a heart murmur intermittently from her second to her eleventh year. It persisted for so many years that, notwithstanding the absence of enlargement of the heart, Dr. Hamill was uncertain whether the murmur was organic or functional. This uncertainty was augmented by the fact that she had had recurrent attacks of acute follicular tonsilitis. In her eleventh year, she was taken abroad and when she returned, at the end of a year, the murmur had disappeared completely. It has not since recurred and, inasmuch as it had the characteristics of the ordinary functional murmur, Dr. Hamill assumes that it was functional, rather than organic. He spoke of this case in order to emphasize the importance and the difficulty of differentiating between these two classes of murmurs. Functional murmurs are common in acute febrile diseases and during convalescence. In association with chorea, rheumatism, and follicular tonsilitis, it is important to determine which type of murmur

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is present, since one may unnecessarily prolong the rest in bed, under the impression that the murmur is organic. If carefully studied, it is fairly easy to differentiate between them.

HYDROCEPHALUS ASSOCIATED WITH PREMATURE DEVELOPMENT.

HYDROCEPHALUS ASSOCIATED WITH PREMATURE DEVELOPMENT. DR. JAS. K. YOUNG'S PATIENT.

DR. JAMES K. YOUNG presented this patient, a girl of ten years. There are five other children in the family, all in good health. Birth was normal, and the child's head at that time was not as large as that of some of the other children. At five weeks she had a so-called attack of measles. With this she had a shrill cry and pneumonia. There was no retraction of the head. When eleven weeks old the hydrocephalic condition was first noticed. The condition has rapidly progressed. She has never been able to walk alone, although two years ago she could walk fairly well with support.

At two years of age the head circumference was 22 inches (normal, 19 inches); the present measurement is 26½ inches (normal, 21 inches). At present the child is remarkable in having the appearance of a well-developed girl of sixteen. The breasts are full and show much glandular tissue. The pelvic measurements correspond more nearly to that age, being but little

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under adult normal size. She menstruated at nine years, and the periods have been regular and painless.

The head is markedly hydrocephalic, but presents two conditions rare in hydrocephalus, thick hair and a thick skull. The patient is mentally bright; speaks both French and English, sings, etc. Has a good memory.

She was brought to clinic because of an old dislocation of the hip. Two years ago she fell from a chair onto the floor. The dislocation was never reduced.

Examination showed flaccid paraplegia, right foot equinovarus, left foot pes planus with foot everted; knock-knee on left side caused by faulty sitting position; dislocation of right hip upon the dorsum of ilium, and some slight relaxation of the sacroiliac joint on the right side. An operation for reduction of the dislocated hip was performed January 25, 1906, but very little could be accomplished.

BELLA S.—AGED 8¾ YEARS. BIRTH PALSY (CEREBRAL SPASTIC PARALYSIS), PREMATURE DEVELOPMENT. PATIENT OF DR. D. J. M. MILLER.

The peculiarities of the case reported are the supposed etiology, the intelligence of the patient, the premature development, the thickness of the skull, the deformities of the lower extremities and the irreducible dislocation.

DR. MILLER said that, on seeing that Dr. Young intended to

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show a case of premature development this evening, he had thought the photograph, which he now presented, of a girl of eight and three-quarter years, with cerebral palsy, would be of interest to the members. This child, as the picture shows, is very much developed. She has not menstruated, but the mammæ and the pubic and axillary hairs are those of a girl of fifteen or sixteen. Dr. Miller thinks that there must be some connection between arrested mental development and premature physical development. When the mental development is arrested, the physical growth seems, sometimes, to go on with greater force; as if it were compensatory. The child described by Dr. Miller is an idiot, a hemiplegic since birth.

TWO CASES OF ENURESIS, EXHIBITING TOLERANCE TO LARGE DOSES OF BELLADONNA.

Dr. H. Lowenburg presented two boys, illustrating his report, which will be found in full among the "Papers," page 46.

Dr. J. P. Crozer Griffith said that the tolerance of children to belladonna is well recognized, but he had had some experience that had made him feel that one cannot presume upon this fact. Children sometimes show greater susceptibility to the effects of belladonna than do adults. There is no drug toward which persons show such varying idiosyncrasy. Dr. Griffith was once sent for to see a child supposed to have scarlet fever, after having taken a very few drops of tincture of belladonna. Dr. Griffith makes it a rule always to begin with a small dose.

Another fact suggested is the importance of using the alkaloid, rather than the tincture. Dr. Lowenburg's suspicions about the strength of the tincture will frequently arise with everyone. Dr. Griffith used the alkaloidal solution, and has repeatedly found that children will take even twenty drops of the 1:1000 solution of atropin, *i.e.*, $^1/_{50}$ grain of atropin, two or three times a day before exhibiting the physiological effects.

Dr. Griffith said that he had heard of an instance where a child of eight or ten years in a hospital showed a remarkable tolerance to belladonna. Two bottles of atropin were placed close together on a closet-shelf, where they should not have been. One was a dilute solution, to be used in teaspoonful doses for enuresis, and the other a 4 per cent. solution for use in the eyes. The child got a teaspoonful of the latter, *i.e.*, nearly 2½ grains of atropin,

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but only one dose. She had wild delirium, flushed skin and dilated pupils for several days, but finally recovered.

Dr. Scott spoke of a child that showed marked susceptibility to atropin. She had been struck in the eye with a stone, and immediate hemorrhage into the anterior chamber followed. With the idea that it might be of service, he instilled a few drops (two or three) of a 4 per cent. solution of atropin, and then sent for a well-known oculist. Several hours after the using of the atropin, the child had a scarlatiniform rash, rapid pulse, became delirious, developed temperature, and showed all the toxic effects of the drug. She was very susceptible to belladonna, as Dr. Scott has since ascertained.

Dr. Norris said that a short time ago he had read an account of the work done by some German investigators concerning arsenic. They tried to explain why the Styrian peasants can eat so much without bad results. They took some animals and fed them with small quantities of the drug, increasing the amount until enormous toxic doses were reached. The animals did not develop any toxic symptoms. It was shown by an examination of their feces that the animals had not absorbed the drug. A certain amount of antitoxic immunity had been developed by the body-cells; so that, although the dose was increased, the substance was passed out through the alimentary canal. It seemed to Dr. Norris as if in the case of atropin there might be a parallel condition; although Dr. Lowenburg's patients did react to the large doses of the drug by discontinuing their involuntary micturition.

Dr. Miller wished to know whether Dr. Lowenburg had tried the effect of the drug on the other members of the family. He said that this is a marked instance of the well-known tolerance of children to belladonna, and he wondered whether the idiosyncrasy extended to the whole family.

Dr. Lowenburg said that he believed the tolerance for this drug to be similar to the tolerance for any other narcotic, as tobacco in men, who start with a small dose and become used to it. He felt sorry that the discussion had not included some explanation of the cause of the tolerance of such large doses of belladonna instead of being composed of the recital of cases wherein small doses had caused toxic effects. His own cases are interesting through the fact that the patients developed no poisonous effects from the tremendous doses given. Infants have a greater

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susceptibility than do children of this age. Dr. Lowenburg has seen rashes from belladonna in infants under one year of age follow the giving of comparatively small doses of the drug. Dr. Lowenburg said that he could not answer Dr. Miller's question.

PNEUMONIA IN AN INFANT OF SEVEN MONTHS, IN WHICH PHYSICAL SIGNS WERE ABSENT DURING THE ENTIRE COURSE OF THE DISEASE.

Dr. D. J. Milton Miller reported this case, which is published in full among the "Papers" in this volume, page 49.

Dr. Hamill thought that such cases must be very common. He had seen an infant under one year of age during the summer months, several years ago, that had the symptoms of pneumonia. There was a sudden rise in temperature, preceded by vomiting and followed by rapid and labored breathing. There was no cough and, for four days, absolutely no physical signs. The chest had been examined very carefully each day and on the fifth day a limited area of bronchial breathing just below the angle of the left scapula was found. The area could have been covered by half a dollar. There were no abnormal signs at any other part of the chest. This area was absent on the following day. It occurred to Dr. Hamill that this patch might readily have been overlooked and the case considered one of pneumonia without physical signs. On the sixth day there was a crisis with the rapid disappearance of all the symptoms. He examined the patient carefully for four days after this, but no pneumonic signs appeared. This child was less than one year of age.

In Dr. Hamill's wards at the Polyclinic Hospital, two years ago, there was a colored boy taken ill suddenly with all the symptoms of pneumonia and with a marked leukocytosis; but without physical signs. Dr. Hamill and his assistants examined the patient each day and he was also shown to the students, but no one could find any abnormal signs in the chest. The patient had a very high temperature for seven days, and then a fall by crisis; and his symptoms disappeared entirely.

This subject had always been of great interest to Dr. Hamill, and he follows all cases closely. He has seen cases in which the physical signs were present for a brief time, and cases in which the physical signs developed after the crisis, but the only case in which they were entirely absent all of the time was that of the colored boy referred to.

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Dr. Charles A. Fife said that Dr. Griffith had a case almost parallel. The patient, a child of eleven months, was suddenly taken ill with a temperature of 103° F. There was no vomiting; but the respirations were rapid (up to 60), and varied between 45 and 60 for nine days. At no time was the child very blue, but there was some cyanosis. At no time could there be detected any physical signs, except in the last day or so, when there was a little roughening of the breathing at the right apex. Even this was not certainly present. There were no râles. The Widal test was negative. The leukocytes numbered 18,000. The temperature is now going down slowly, and the respirations are becoming less. It was considered to be a case of penumonia without physical signs.

Dr. Hand said that cases like Dr. Miller's are uncommon; but those in which the physical signs are negative until after the crisis, when they become distinct, are comparatively numerous. Those in which the physical signs are absent, even after the crisis, are, however, quite rare. Dr. Hand has found blood-tests a great help in arriving at a correct diagnosis in such cases. A negative Widal reaction excludes typhoid fever, and a leukocytosis confirms the diagnosis of pneumonia.

Dr. Miller said that the chief interest in these cases is the diagnosis, which is a matter of importance; because it makes a great difference in prognosis. If the baby has croupous pneumonia, one may confidently say that it will get well in a short time; but if it has enteritis, which many of these cases simulate, or typhoid fever, this favorable result cannot, with so much certainty, be prognosticated.

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THE PHILADELPHIA PEDIATRIC SOCIETY.

Stated Meeting, Tuesday, May 8, 1906.

ALFRED HAND, JR., M.D., PRESIDENT.

MEETING HELD IN THE INTEREST OF A PURE MILK SUPPLY.

DR. SAMUEL MCC. HAMILL read a paper on

THE MILK COMMISSION: ITS PURPOSES AND AIMS.

Dr. Hamill made a statement regarding the work of the Philadelphia Pediatric Society Milk Commission, in which he pointed out the changes which had been made in the manner of certification and referred to the results of the Commission's work and to its beneficial influence upon the general milk supply.

He also replied to Dr. A. H. Stewart's recent criticism of the Commission's work.

DR. M. P. RAVENEL read a paper on

THE RELATIONS OF TUBERCULOSIS TO THE MILK SUPPLY.

DR. J. S. EVANS read a paper on

THE DANGERS OF COMMERCIAL PASTEURIZATION OF MILK AND THE ADVANTAGES AND LIMITATIONS OF HOME PASTEURIZATION.

The objects of pasteurization of milk are:

(1) To prevent spread of infectious diseases.

(2) To prevent the grave digestive disturbances, especially in children, produced by the organisms found in milk from a diseased herd.

(3) To lessen the tendency to fermentation changes in the digestive tract by diminishing the number of bacteria.

(4) To prevent infection by tuberculosis.

Under proper conditions all of these may be obtained. Statistics show that in those districts of Germany where pasteurized milk is used the mortality from intestinal diseases of children and from tuberculosis is greatly lessened.

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Commercial pasteurization, according to present methods, does not insure these safeguards. Examination of the plants in Philadelphia give evidence of the fact that a faulty technique persistent in all but one put upon the market a milk of much higher bacterial content than the original article.

The only desirable method of pasteurization is in the individual bottle and not in bulk, as is the common commercial method.

The following figures will bear out this statement:—

	Immediate count. Bacteria to Can.	After 24 hours on ice or time of delivery. Bacteria to Can.
Plant No. 1.		
Original milk	6,544,000	12,120,000
Milk pasteurized	4,029,800	24,240,000
Plant No. 2.		
Original milk	1,560,000	4,000,000
Milk pasteurized	2,250,000	8,980,000
Plant No. 3.		
Original milk	1,090,000	2,181,000
Milk pasteurized	26,260	78,780
At this plant the technique was good.		
Plant No. 4.		
Original milk } 120 samples.		1,130,000
Milk pasteurized } 120 samples.		4,250

The dangers of commercial pasteurization are:—

(1) The possibility of contamination according to present methods.

(2) The possibility of marketing unsafe milk by conscienceless dealers.

(3) The widespread ignorance on the part of the laity as to its value and limitations.

The advantages of home pasteurization are due to the easy application of the proper method to milk which comes to the consumer with the possibility of its being unsafe, and is only limited because of the lack of knowledge on the part of the housewife as to its proper application.

Mr. E. T. Gill, of the Haddon Farm Dairies, and Mr.

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GEORGE ABBOTT, of Abbott's Dairies, also read papers. Mr. Abbott's paper on

THE DELIVERY OF MILK AND ITS CARE IN THE HOME

will be found on page 52, among the "Papers."

DR. LEONARD PEARSON read a paper on

EXISTING AND DESIRABLE LAWS GOVERNING THE MILK SUPPLY.

The existing laws relating to milk have been enacted during the last twenty-five or thirty years, and they reflect to some extent, although feebly, the development of knowledge concerning milk and of a desire for a better supply. An early law (1869) conferred upon municipalities the power to appoint milk inspectors and to make rules to protect the people against adulteration and dilution of milk. In 1878, a law was enacted forbidding the sale of impure, adulterated or unwholesome milk. The addition of water or of ice to milk was declared to be an adulteration. Swill milk produced by garbage and swill-fed cows kept in cities attracted attention about this time, and it was provided that any milk obtained from animals fed on distillery waste or on any substance in the state of putrefaction is declared to be impure and unwholesome. An extension of this law, but relating only to milk sold in cities of the second and third classes, was enacted in 1885.

These laws were directed against the most glaring defects then recognized. In 1895, the "pure food" law was passed, and this, in general terms, prohibited the sale of milk that had been diluted, skimmed or that is colored or preserved or that is produced by a diseased animal. An additional law forbidding the use of preservatives in milk was enacted in 1901. Under these laws a system of milk inspection has grown up which, until quite recently, has had reference chiefly to the prevention of the sale of watered, skimmed and preserved milk. Of course, the sale of skimmed milk as such has been permitted. The improvement of the milk supply with relation to these factors has been very great. Comparatively little preserved milk or milk below the legal standard for fat and other solids is sold in Philadelphia. Constant watchfulness is required to maintain the ground that has been gained, but the situation with regard to these points ought to be highly satisfactory to consumers as it is creditable to the Milk Inspection Department.

But it becomes constantly more evident that, so far as the

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wholesomeness of milk is concerned, so far as concerns its suitability for use as food, especially for invalids and infants, there are other matters of infinitely more importance than the abstraction of a little cream or the addition of a little clean water from the farmer's spring. There is a provision of law enacted by the Legislature of 1905 under which the State Live Stock Sanitary Board may cooperate with local Boards of Health for the purpose of ascertaining the condition of dairy herds and of milk supplies and for the purpose of protecting such milk supplies from contamination. When the State and city authorities join in such work, half of the cost is to be borne by the State and half by the city.

We now know that the evil effects that come from the use of impure milk do not come so much from the glaring adulterations that were formerly so common and that are so easily recognized by the chemist, as from the occurrence in milk of pathogenic organisms or toxic substances that result from the growth of contaminating germs. In other words, it is recognized that the important thing is that milk shall be clean when produced, that it shall be protected from contamination, handled in a cleanly way, kept cool and delivered as promptly as possible to the consumer.

The laboratory of the Department of Health has taken a leading position in the work on these newer phases of milk inspection. The examinations for pus, streptococci and dirt that are being made in this laboratory under the direction of Dr. Abbott and that have been developed by Dr. Stewart and Dr. Pennington have been of the greatest service in calling the attention of producers and dealers to the importance of cleanliness in all of their dairy work and to the importance of keeping healthy cows. It is evident, however, that the laboratory examination of milk, while of the greatest importance, and indispensable, is not sufficient to detect all of the diseases of cattle or the defects on dairy farms, which may influence the wholesomeness of milk. In addition to this examination, visits should be made to dairy farms for the purpose of ascertaining the condition of health of the cattle and the conditions under which milk is produced with the view of pointing out defects and remedies for them.

At present there is no systematic inspection of herds or farms and most of the milk sold in Philadelphia comes from places that have not been visited even by the dealers who handle it in the

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city. Some of the more progressive dealers, however, have arranged, or are now arranging, for the periodical veterinary examination of their producers' establishments. There is danger that these inspections will be of a rather perfunctory nature and at too long intervals. A number of milk dealers in Philadelphia advertise "veterinary and sanitary inspection" where there is not even a pretence of such inspection.

This brings up the question of fraudulent representation in the milk trade. Milk is advertised and sold as "pasteurized" when the process that it is put through does not constitute pasteurization even under the most lenient construction of the term. A great deal of milk is sold as "absolutely pure" when it is no better than ordinary milk and is far from being pure.

Perhaps one of the most serious conditions from the public health standpoint is in relation to the sale of pasteurized milk without notice to the consumer that the milk has been pasteurized. Pasteurization by the milk dealer is often a substitute for cleanliness. He pasteurizes milk that is so dirty or that has been handled so badly that it would not "keep" if it were not pasteurized. The heating to which such milk has been subjected kills off the organisms that produce lactic acid and the milk may become overrun with bacteria, be very much altered in its composition and possibly toxic without turning sour, and so without giving notice by this usual sign that it is old, stale milk. Milk that has been heated or pasteurized should be so labelled and should never be sold without notice to the purchaser of the process to which it has been subjected.

The first step toward a more complete and systematic inspection of milk as it is sold and as it is produced should be to obtain a complete registration of milk dealers and milk producers. It is necessary to know the names and addresses of all persons engaged in these businesses.

The legislative needs may be summed up as follows, no attention being paid to the points that are already sufficiently covered:—

A registration of all producers of market milk and of all milk dealers.

A legal definition and restriction of the use of terms used to describe milk, as "certified," "pediatric," "pasteurized," "sanitary," "absolutely pure," "veterinary inspected," etc.

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A requirement that milk shall be sold for what it is, for example, that "pasteurized" milk should not be sold without notice.

Provision for competent inspection for dairy herds and farms.

It occurs to me that this is about as much as may properly be demanded in the way of legislation at this time. The object of legislation is to prevent fraud and to provide penalties for gross or wilful wrong doing. By means of legislation a minimum standard is established, but the minimum provided by legislation will never be good enough for the best informed and most careful people. There will always be need for a special supply of milk produced in accordance with such high standards as those of the Pediatric Society.

Milk better than is required by law can be had only by supplying a market for it. If there be a demand it will be satisfied. Some of the more earnest and progressive milk dealers of Philadelphia are willing to equip and to furnish better milk than the market demands, that is, more costly milk than there is market for. The hospitals and public institutions continue to set a very bad example in their milk purchases. They buy dirty, old milk or ordinary milk, with no special requirements, because it is cheap.

It is of the highest importance that those who know good milk and know the advantages of good milk, shall demand, recommend and advise the use of clean, safe milk. If they do not, there is no reason why producers and dealers should exert themselves to provide for an unappreciative market milk that is better than the minimum required by law.

Dr. D. J. Milton Miller read a paper on

SOME OF THE DANGERS OF ORDINARY MILK; THE PHYSICIAN'S DUTY TO EDUCATE THE PUBLIC IN THE NECESSITY OF A PURE MILK SUPPLY.

The physician's highest duty is to prevent disease. Medical men are often more powerless in the cure of disease than in its prophylaxis. This is conspicuously true of diseases caused by unclean milk. Ordinary market milk is usually dirty and germ-laden; it may poison as well as nourish, and is an important factor in the great mortality of bottle-fed infants. Unclean milk, in addition to the various diarrheal diseases of early life, is responsible for numerous outbreaks of infectious disease: sore throat, diphtheria, scarlet fever, typhoid fever, tuberculosis,

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specific enteritis, anthrax and other infections have been disseminated by milk. People, physicians and, sad to relate, hospitals, are singularly apathetic about this matter. One of the greatest obstacles to the general use of clean milk is the cost. Physicians should endeavor to overcome this objection by pointing out the false economy of cheap milk; its liability to spoil, to cause illness, and that good milk costs more to produce. Physicians should instruct people in the domestic care of milk; in the dangers of pasteurized and sterilized milk—that such milk is only a makeshift and cannot replace sound, fresh milk. The Milk Commission should receive the hearty support of physicians, who should do all in their power to extend the use of certified milk. Finally, it is the duty of physicians to endeavor to bring about state and municipal support, if not control, of milk commissions and the milk supplies, as the efficient state and municipal control of the latter appears to be the most satisfactory solution of the pure milk problem.

Dr. Ravenel, in opening the discussion, took occasion to answer a question by Dr. Hamill as to what constitutes pus in milk. Dr. Ravenel said that he approached the question of pus in milk with some trepidation, as he had not the fortunate faculty of arriving at conclusions on insufficient grounds. He has studied the subject carefully for some time, having been in correspondence with some of the best authorities about milk. According to his own experience and that of those with whom he has discussed the subject, there is no milk that does not contain pus-cells, if one chooses to call them so, or leukocytes, as Dr. Ravenel prefers to denominate them. Microscopically there is no difference between leukocyte and pus-cells. The latter are, in fact, leukocytes migrated to the point of resistance.

Finding these cells in all milk, the question naturally arises, At what point shall one cease to regard them as a normal content of milk and consider them as evidence of inflammation? Do these leukocytes always denote inflammation? No, they do not, said Dr. Ravenel. The normal blood contains from 8,000 to 10,000 leukocytes per c.mm., which is 800,000 to 1,000,000 per c.cm.; yet pediatrists are told to condemn milk that contains only 100,000 per c.c.! It is, of course, possible that 1,000,000 leukocytes per c.c. may be normal in blood, while 100,000 in milk may

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mean purulent inflammation, but it cannot be assumed in the absence of further proof. When certain substances are injected into the peritoneal cavity of animals leukocytes are poured out in multitudes, yet the animal does not die, but recovers. The same result may be obtained in a number of different ways. Sterile water, when injected into the udders of cows, produces a hardening that is not inflammatory.

This shows the absolute chaos in which the subject rests, and the inability of anyone to speak with authority concerning it. Different persons have made varying statements as to the point at which these leukocytes should be regarded as indicating the presence of inflammation. One man says that if one finds ten pus-cells in a field, pus is present. Dr. Stewart maintains that the presence of twenty-three of these cells in the sediment of 1 c.c. of milk, when spread over a centimeter square of glass, will indicate pus. In Boston, they centrifugate 2 cm. of milk and spread it over 4 cm., and then allow fifty cells to the field. All of these methods are inaccurate, for no one, in spreading, can make a perfectly even layer; it is a physical impossibility. In Boston they examine with low power to see that the spread is fairly well made, but they acknowledge that it is not a certain method.

Doane, of Maryland, thinks that 500,000 leukocytes may be present before the milk should be regarded as suspicious, and looks for fibrin connecting the cells; and Dr. Ravenel thinks that this is the safest rule to go by. The Milk Commission, after due consideration and study of the question, came to the conclusion that if the number of leukocytes in any given sample of milk appears excessive, acknowledging that there is no standard to go by, and that it is a matter of personal judgment in regard to what should be considered the normal amount—then the colonies developing from this milk on the plate should be carefully examined. If pathogenic organisms are found, pus should be considered as present. Dr. Ravenel said he was glad that the latest work on this subject, published by Dr. Slack, of Boston, is in accord with this view.

Very little is known about the question of pus in milk, and great injustice is often done by setting up a dogmatic standard. Dr. Ravenel acknowledged that the methods were not perfect, as explained by Dr. Hamill, and said that he would close his re-

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marks by repeating what he had said a year before at a meeting of the Pediatric Society—that if the milk certified by this Society is not fit for human food, cow's milk should be ruled out altogether as an article of diet. Through reading and personal investigation, he was prepared to state that there is no better milk produced in any part of the world than that supplied by the dairies under the care of this Society.

Dr. R. A. Pearson said that he wished that more persons could have heard the papers that had been read, and that some way could be devised to spread the information contained in them. It would be a great thing for the interests of better milk.

Dr. Pearson thinks that the producers are ahead of the consumers in regard to the desire for good milk. If the latter would demand it, and pay for it, the producers would keep up with the demand. He also wanted to congratulate the Milk Commission upon the work they have done. Aside from their chief purpose, they have done much to make the average quality of the milk-supply of the city better. When one high-class dairy is established it exerts an influence over other dairies in the same locality. Those not under the direct control of the Commission are improved. Another good result achieved by the Commission is the strict enforcement of dairy-laws. The Milk Commission and the dairy-laws accomplish the same result. The Commission makes prominent the fact that good milk is produced, thereby adding to the attractiveness of using milk in the household. Therefore, their work tends to increase the amount consumed, which is a desirable result. The Commission is, however, able to accomplish much that the laws are accomplishing; and the Commission increases, instead of diminishing, the quantity of milk consumed. For this reason, the expenses of the Commission should be borne by the public from the fund that supplies the money to carry on regular milk-inspection. It would be entirely proper to pay the expenses of the work of the Milk Commission from the public treasury.

Dr. Pearson then remarked that all this talk about milk comes back to the same point; if we could get good milk, produced in a cleanly manner, that would be all that could be asked. Many different devices have been brought out for the production of clean milk. At Cornell they have a score-card, by the use of which it is possible to judge the dairy producing milk upon a

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percentage-basis; so they can say, so much per cent. good, or so much per cent. bad.

Dr. C. M. Seltzer said that when he saw the programme of the evening's work, he was reminded of the boy whose eyes were bigger than his stomach. The subject is so large that it cannot be thoroughly gone over in one evening. In discussing it, Dr. Seltzer said that he would take up a few points from the producer's standpoint.

One of the things that had been said was that if the people demand it, good milk will be forthcoming; but Dr. Seltzer said that it has been produced before the people demand it or are willing to pay for it. They prefer any kind of milk that does not cost more than eight cents a quart. Whether children's lives depend upon it or not does not seem to make any difference; and if it does, it is with the working class, rather than with the rich. The people that think most of their children's welfare are the middle class or the poor, who can little afford to pay a good price for a good article.

Dr. Seltzer said that he was interested in the remark made by Mr. Abbott, that this milk is furnished at little extra cost to the consumer. This is the case. The consumer does not pay a properly increased price for the product; or, if he does, it does not go to the men that spend the most money and have the most at stake in producing the milk—the farmers. When the farmer gets less than half, it is not just to him. A proper supply will not be furnished until this wrong has been righted to a certain extent. A few months ago, an eminent pediatrist from New York read a paper before this Society. In speaking to him afterward in regard to the destruction of diseased cattle, he said:

"If I were a farmer, I should not kill one cow until the people were willing to pay for it." After all, it comes back to the point that you have got to go to the producer before you can right conditions that we now consider wrong.

Dr. Seltzer said that he had entered the room just in time to hear Dr. Hamill remark that milk is not thirty-six to forty-eight hours old when it reaches the consumer. With all due deference to him, Dr. Seltzer said he could not see how this statement could be made good. The milk comes in trains that do not arrive until from half-past eight to ten o'clock in the morning. The milk does not reach the dealers until noon, and is not delivered to the

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consumers until the next morning. The milk to be delivered tomorrow morning arrived in the city this morning, and was obtained at this morning's or yesterday evening's milking. Dr. Seltzer has tried to get along with the ordinary shipment on trains, and has found it very unsatisfactory. The demand that the milk shall be at the house in time for breakfast is at the root of the trouble. To meet this demand, the milk must be delivered early, even if it is old. To obtain it fresh, it must be delivered later than nine o'clock. Dr. Seltzer arranges to have his milk supply brought in by wagon from the farm at night, and he thinks that whatever success has been attained in producing milk that will keep and be satisfactory is in some degree due to getting it into the city when it is comparatively new milk.

In ordinary circumstances, the bacteria will multiply in milk within twenty minutes; so when milk is delivered from thirty-six to forty-eight hours old, it must have a high bacterial content. As to keeping it at low temperatures, this is impossible. These are practical commercial possibilities that one must recognize. The people must be educated to take a milk-supply that comes to them late in the morning. If this were done, it would be a god-send to most dealers. This demand of the public is difficult to overcome, but we cannot have the milk so old and have a low bacterial count.

One circumstance that is unfair to the producers is the varying hours of making the examination of milk after it has left the cow. The Commission say they want to know what the milk-count is when it goes to the consumer. This is the important feature; but, in justice to the various men that produce the supply, some control should be had over the men that dispense the milk, as to what hour it gets to the consumer. When half a dozen specimens of milk are examined and compared, the fact that some milk has been much longer from the farm before it gets to the consumer is not considered. The figures, then, are not just. On one farm in New York State, Dr. Seltzer saw a count in which, out of a dozen specimens examined, there were two or three of sterile milk. Dr. Seltzer said that the important point to bear in mind when comparing the milk of various dairies is the time elapsing before the milk reaches the consumer. He thinks it unjust that all the blame should be put on the producer, as is usually the case, when the producer is at the mercy of the dealers and consumers.

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PAPERS

DELIVERED
BEFORE

The Philadelphia Pediatric Society

AND PUBLISHED IN

Archives of Pediatrics

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REPORT OF A CASE OF ATYPICAL HEMIPLEGIA IN A CHILD.

BY ELEANOR C. JONES, M.D.,

Visiting Physician to the Woman's Hospital, of Philadelphia.

I present this case as one of atypical hemiplegia, because with the associated history and symptoms of cerebral hemiplegia there is present a flaccid condition of the paralyzed hand and arm.

Charles C., *aet.* eight years, is a member of a healthy family of four children, and there is no alcoholic or specific taint in the family. His personal history is the usual one of hemiplegia in infancy, and may be summed up as follows: The child was healthy up to eighteen months of age, and then suddenly became ill with the symptoms of fever, vomiting and convulsion, which were confined to his left side. He continued ill for about one week, and as his general condition improved he was found to be paralyzed on his left side. The order of the development of the paralysis was not noted by his mother. The limbs remained flaccid for some days following the attack, after which the flaccidity began to lessen, and the limbs, especially the hand, became spastic. His mother worked with his hand quite vigorously and claims that she cured him of the spastic condition, for when he began to walk again, when about three years of age, his hand and arm began to get markedly limp, and became much as it is at the present time. He had recurrent unilateral convulsions at an interval of about one month for about six months following his initial illness. These gradually became less frequent and now he has not had a convulsion during the past two years.

Charles C. is a small boy for his years, and his mental development is backward, but not markedly abnormal. He is quick to anger and destructive at times. His speech is very indistinct. He is partially paralyzed on the left lower part of his face, and also his left arm and leg are partially paralyzed. The upper extremity in this case, as is usual, is more severely paralyzed than the lower extremity and the palsy is progressively more marked toward the periphery of the limbs, and there is present the always

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associated vasomotor palsy, so that the limbs present a characteristic red-blue appearance. The stunting of growth is more marked in the arm and hand than in the leg and choreiform movements are frequently observed in the hand. But the hand and arm instead of being spastic are flaccid, and the hand is limp like a case of anterior poliomyelitis. He can lift his hand, but it falls about by its own weight. The leg is less paralyzed than the arm, and there is present a spastic condition of his foot, so that the tendo Achilles is shortened and the foot cannot be brought up to a right angle. It is dropped, presenting the position of pes cavus, that is, the normal concavity of the foot is exaggerated. His reflexes were tested with the result of showing that both knee-jerks are present and perhaps slightly exaggerated. No ankle clonus was obtained. The planter reflex of the extensor type (Babinski's reflex) is probably present on the left side. The biceps and triceps jerk on the left side are present, but rather slow. A faradic examination was made of nearly all the motor points of his face, arm and leg, and the faradic response of all these muscles was obtained, although the response was slower and weaker than on the sound side. An examination of his face shows a marked paralysis of the lower part of his face on the left side. He is not able to whistle. He can wrinkle his forehead slightly on the paralyzed side and also close his eye. An examination of his eyes shows his vision to be perfect and that the muscular movements are unimpaired; the external rectus muscle is normal, showing that abducens nucleus is not involved. He protruded his tongue in a straight line and the sense of taste is perfect on both sides of his tongue.

ATYPICAL HEMIPLEGIA IN A CHILD.

The case is probably due to an encephalitis, the result of the

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invasion of the brain tissue by organisms of a specific nature. The history of the case, which was of sudden onset in a previously healthy child, with accompanying symptoms of fever, vomiting and convulsions, and with rapid amelioration, as is usual in acute infectious diseases, points to a disease of infectious origin. The subsequent development of unilateral convulsions, and a spastic hemiplegia, as was present for over a year in this case, are conditions that are entirely cerebral. At the present time the condition of his reflexes, and the response of the affected muscles to the faradic current, are again such as only obtain in cerebral palsies. The one atypical symptom is the flaccid condition of his left hand and arm. I am at a loss to account for this unusual condition, but hope Dr. William G. Spiller, who is present and saw the case with me, will explain this feature of the case.

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A CASE OF BELL'S PALSY IN AN INFANT OF EIGHT MONTHS.

BY JOHN H. W. RHEIN, M.D.,
Neurologist to the St. Agnes and Howard Hospitals, etc., Philadelphia.

(From the Howard Hospital, Philadelphia.)

The patient, an infant of eight months, was brought to the Dispensary for Nervous Diseases, at the Howard Hospital, on October 3, 1905, by her mother, who stated that, a week previously, the right side of the child's face became paralyzed the day after a small abscess under the chin on the right side was evacuated by a surgeon.

The family history is entirely negative. Both parents are living and well, as are also two brothers and two sisters. The child was born at term, but was a cross birth, and it was necessary to turn the child and deliver her feet first. The labor was difficult and the child very feeble for nine days after birth, during which time she was unable to nurse at the breast. There was no paralysis noted at this time, and she gradually grew stronger, remaining in perfect health until September 23d, when she developed an abscess under the chin on the right side, which was incised and evacuated on the third day by Dr. Frank Patterson.

The day after the abscess was opened the mother noticed that the child was unable to close the right eye, that the mouth was drawn to the left, and that the head was slightly tilted to the left. The child was brought to the clinic a week later, when a complete right-sided facial palsy was observed. (See figure, page 7.) The paralysis was not apparent when the face of the infant was at rest, but when she cried she did not close the right eye, nor move the right side of the face. There was, as far as could be learned, no involvement of the throat or palate muscles, which was confirmed by the fact that the child had no difficulty in nursing. There was no paralysis of the ocular muscles, and no apparent weakness of the arms or legs. The ears and throat were carefully examined, but

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nothing abnormal was found. The pupils reacted normally. The knee-jerks and the tendon-jerks of the arm were active and equal on both sides. The plantar reflex was normal, and there was no Babinski phenomenon present. No local wasting could be observed anywhere. The bowels were regular, and the digestion good. The child did not present any signs of rachitis. The fontanels were apparently closing satisfactorily. An electrical examination of the muscles showed the presence of the reactions of degeneration. There was a slight increase in the galvanic irritability of the muscles of the right side, and the response to the faradic current was gone to bearable currents. The child presented nothing else abnormal in the history, or physical signs, except that occasionally she suffered from night-terrors.

CASE OF BELL'S PALSY IN AN INFANT.

In many respects this case is not unusual. There is nothing peculiar about the paralysis, or in the cause of the paralysis. The usual causes of unilateral facial paralysis in infants are those which operate in adults. In addition to these, however, we meet with cases of this character immediately following childbirth, when they are due to pressure of the forceps, or pressure exerted by the promontory of the sacrum, or by the ischiatic spines, or, finally, in rare instances, by intrapelvic tumors. Probably the most frequent cause of Bell's palsy in children is disease of the middle ear. It may be the accompaniment of diseases at the base of the brain, such as tumors, meningitis, or fracture of the base of the skull, and may follow surgical operations in the region of the ramus of the jaw. Finally, unilateral facial palsy may be caused by extension of inflammation to the nerve from neighboring inflammatory processes, as in the case exhibited to-night.

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It is unusual, however, to see a typical case of facial palsy develop at the early age of eight months. Bell's palsy is rare under ten years of age, and Gowers states that he has seen 2 cases in the second year of life. It probably occurs most frequently between the ages of twenty and fifty years. In Sachs's opinion (*Nervous Diseases of Children,* 1895, p. 229) the disease is rare under three years of age, although he himself saw one patient nine months of age who suffered from rheumatic facial palsy. Henoch (*Vorlesungen über Kinderkrank.,* 1903, p. 231) reports a case in a child of two, with complete palsy of the left facial nerve, due to pressure at the stylomastoid foramen by an abscess in the lymph nodes of the neck. He also described 2 cases in children of five and eleven months, respectively, the cause of which was a glandular tumor under and behind the right ear, associated with diffuse swelling of the connective tissue. In a fourth case, a child of four months, there was left-sided facial palsy following gangrenous destruction of the nerve at the stylomastoid foramen due to noma of the ear.

Grancher and Comby (*Traité des Maladies de l' Enfance,* 1905, p. 621) claim that age has no influence upon the development of facial palsy, making the statement that they have seen cases as young as eleven and thirteen months.

Notwithstanding the fact that it is well known that facial palsy develops in young infants, I think it may be concluded that it is comparatively uncommon. This is rather remarkable when we consider that middle ear disease, which is one of the most common causes of Bell's palsy in children, is of very frequent occurrence in young children.

The possibility occurred to me that the anatomic relations of the temporal bone may have something to do with this. It will be remembered that at birth that portion of the temporal bone called the pryamid is spongy and vascular, and that the canal through which the facial nerve passes is often not entirely covered in. Is it not possible that, by reason of these conditions, the nerve is less susceptible to pressure resulting from caries and suppuration? On the other hand, it must not be forgotten that the anatomic relations may favor the extension of the inflammation to the nerve, because it is so much exposed.

The presence of facial palsy, with abscess of the middle ear, is of considerable prognostic importance. It is claimed by Good-

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hart and Henoch that this combination of symptoms is almost pathognomonic of tuberculosis, and that the prognosis is always bad.

In the treatment of facial palsy in children it is important, in the first place, not to frighten the patient by a too hasty application of the electric current. Sometimes it is wisest, at the first two or three treatments, to apply the electrodes without any current at all. The preferable method of applying the galvanic current (which is the current to be employed) is to place an indifferent cathode electrode at the nape of the neck, or between the shoulders, and a small interrupting anode electrode in the anterior cervical region, and then to turn on the current until the milliamperemeter registers 2 or 3 milliamperes. The anode electrode is then brought slowly up over the distribution of the facial nerve, and the skin slowly stroked for three to five minutes. Care must be observed to avoid as much as possible the bony points, in order to reduce to a minimum the amount of pain. It is impossible, in infants, to interrupt the electrode, as it causes a great deal of pain, besides bringing about a condition of fright. The ascending stabile current for the first two or three weeks of the disease, that is, during the acute stages, should precede the application of the labile current.

Massage is also indicated in the treatment of facial palsy, and is of great value not only in stimulating the nutrition of the parts, but in preventing subsequent contractures.

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REPORT OF A CASE OF CEREBELLAR TUMOR WITH NECROPSY.

BY C. F. JUDSON, M.D.,

Physician to St. Christopher's Hospital, the Sheltering Arms and the Mary J. Drexel Home, Philadelphia.

AND

C. D. CAMP, M.D.,

Assistant in Neuropathology in the University of Pennsylvania; Assistant Neurologist to the Philadelphia General Hospital.

(From the Neuropathological Laboratory of the University of Pennsylvania.)

A brief clinical history of the case is as follows:—

A boy, aged seven years, had an attack of scarlatina in August, 1903. In October of the same year he began to show symptoms of an intracranial new growth, nausea, vomiting, headache, staggering gait and failing vision. In September, 1904, it was noted that he could stand only with his feet widely separated and that walking toward an object he deviated either to the right or to the left and about as frequently one way as the other, but there was no ataxia in the recumbent position. The knee-jerks were exaggerated, especially on the right side, but there was no ankle clonus on either side. The muscular power in the extremities was normal. Vision was markedly reduced, and the ophthalmoscope showed double choked disk with beginning atrophy and small retinal hemorrhages. There was no nystagmus, but the eyes were paretic on executing extreme lateral movements. Other cranial nerves were normal and stereognostic and muscular sense were unimpaired. When presented to the Philadelphia Pediatric Society, April 11, 1905, he was markedly paretic in both lower extremities, but more so on the right side, and was also paretic in the right upper extremity. Power in the left upper extremity was fair. Both legs and the right arm were spastic. Attempts to grasp objects with the right hand caused a coarse tremor in the hand. Extreme lateral deviation of the eyes resulted in coarse, oscillatory, nystagmoid movements. The pupils were dilated but the irides reacted to light and in accommodation. Vision was diminished to light perception only. There were marked vaso-motor disturbances, a rapid pulse, and respiration, extreme hebetude and incontinence of urine and feces.

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Epileptiform attacks were not noted in the course of the patient's illness. Soon after entering St. Christopher's Hospital in September, 1904, he suddenly became comatose for about twelve hours, remaining mentally dull for several days. He died in coma May 20, 1905.

At necropsy, held about seven hours after death, it was noted that the bones of the skull were very thin, varying from one-eighth to one-sixteenth inch in thickness. The fontanels were closed, but the sutures had an appearance as if pulled apart, *i.e.*, the serrations were deep, but did not appear tight, and they were freely movable. The dura mater was normal and adherent only at the sutures. The cerebral hemispheres were much larger than normal and the convolutions were flattened. On the base of the brain, just posterior to the optic commissure, the third ventricle bulged downward as a cystic protuberance, apparently the dilated canal of the infundibulum. It pushed the chiasm forward and separated the optic tracts to such an extent that instead of decussating they appeared to be connected only by a small band of tissue; each optic tract continuing as the optic nerve on the same side. Puncture of the ventricle allowed the exit of a large quantity of clear cerebrospinal fluid under considerable pressure.

The cerebellum was larger than normal and softer. On examination of the inferior surface there was found a mass of soft, grayish tissue in the ventral portion of the vallecula occupying the position of the uvula and nodulus and pushing the pyramid backward. It extended further dorsally in the left sulcus valleculæ than in the right.

The brain and upper portion of the cervical region of the spinal cord were removed and hardened in 10 per cent. formalin solution. Pieces of tissue intended for staining by the Weigert hematoxylin method or by the Marchi method were hardened in Muller's fluid.

On horizontal section the cerebrum appeared normal with the exception of the great enlargement of the ventricles on either side. On section of the cerebellum in the plane of the great horizontal fissure a large oval tumor mass was seen occupying the centre of the section. It measured, after hardening, one and five-eighth inches anteroposteriorly by two and one-half inches transversely; the whole section of the cerebellum measured two and seven-eighth inches anteroposteriorly by four and one-half inches transversely. The tumor was distinctly circumscribed and com-

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pletely filled the fourth ventricle. Its substance was soft and friable.

Histological examination of the tumor by the ordinary staining methods and with the Mallory neuroglia stain showed it to be a glioma.

In sections from the paracentral lobules stained with the thionin stain the Betz cells appeared generally normal. A few, however, in each section examined showed distinct degenerative changes; chromatolysis and displacement of the nucleus to the periphery of the cell. When stained with the hemalun-acid-fuchsin the sections appeared normal and the Mallory differential neuroglia stain showed no increase in glia tissue.

Sections of the optic chiasm stained by the hemalun-acid-fuchsin stain showed a distinct infiltration of round cells about the blood-vessels which was probably an inflammatory reaction due to the increased intracranial pressure. When stained by the Weigert hematoxylin method both optic nerves appeared much degenerated and there were only a few decussating fibres in the optic commissure that stained well by this method.

Sections of the third and fourth cranial nerves appeared normal when stained by the hemalun-acid-fuchsin and Weigert hematoxylin stains.

Sections from the level of the upper portion of the pons showed the tumor growing as a cauliflower-like mass from the left side of the floor of the fourth ventricle which at this point it did not entirely fill. A free projection from this mass extended to the aqueduct of Sylvius. Sections stained by the Weigert hematoxylin method showed the posterior longitudinal bundles to be well stained, although the left was pushed forward by the tumor. The superior and middle cerebellar peduncles did not appear degenerated, and the pyramidal tracts also stained well with the exception of a few small bundles near the median line on each side.

Sections from the pons at the level of the exit of the fifth cranial nerve showed the pons to be considerably flattened by pressure of the tumor which at this level completely filled the fourth ventricle. The tumor mass was attached to the gray matter in the floor of the ventricle, but did not invade it. The pyramidal tract showed no degeneration when stained by the Weigert hematoxylin method.

Sections taken from about the level of the junction of the

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medulla with the pons and stained by the theonin method showed a group of cells near the floor of the fourth ventricle which was probably the nucleus of the sixth nerve. There was slight chromatolytic change in some of the cells, but no displacement of the nucleus in any. The majority appeared normal.

Sections of the medulla oblongata stained by the theonin method showed no degenerative changes in the nerve cells of the hypoglossal nucleus; and appeared normal when stained by the hemalun-acid-fuchsin and Weigert hematoxylin stains.

Sections from the level of the motor decussation appeared normal when stained by the hemalun-acid-fuchsin stain. The Weigert hematoxylin stain showed a slight degeneration in the position of the Von Bechterew intervening zones in the posterior columns on each side, but no degeneration of the anterolateral columns. The Marchi method showed distinct recent degeneration, in section from the same level, in both crossed pyramidal tracts and in the decussating motor fibres, and also some recent degeneration in the posterior columns and entrance root zone on each side.

A summary of the more important pathological findings includes: A large glioma occupying the fourth ventricle and the entire central portion of the cerebellum, superficial only in the ventral part of the vallecula; serial sections of the pons showed that the tumor probably originated from the left side of the floor of the fourth ventricle. There was a marked internal hydrocephalus due to interference with the circulation of the cerebrospinal fluid. There was a recent degeneration in the motor tracts, shown by the Marchi stain, also degeneration of the optic nerves with a round cell infiltration about the blood-vessels within them.

The conclusion reached by Dr. Judson and others who saw the patient with him as to the location of the tumor and the inadvisability of operation were fully confirmed by the pathological findings. Perhaps the most diagnostic symptoms of the location of the tumor beneath the tentorium were: the distinctly cerebellar ataxia and the early optic neuritis. The point of greatest interest in the case, from the standpoint of localization, was the triplegia, the paralysis of both legs and the right arm. This was due to the origin of the tumor from the left side of the floor of the fourth ventricle. As it grew it filled the fourth ventricle and in the cerebellum was almost exactly central, but the amount of pressure exerted by it on the pyramidal tracts still remained

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greater on the left side, and therefore the right side of the body was the more affected.

The presence of degenerated Betz cells in the paracentral lobule may have been due to a tumor toxin. Similar degeneration of these cells has been described in cases of carcinomatosis of the nervous system.[1] In this case the greatly increased intracranial pressure might also be a causal factor, either directly or indirectly through interference with the proper nutrition of the cells.

The presence of degeneration in the posterior columns of the spinal cord and in the entrance root zones has often been observed;[2] in cases of brain tumor, internal hydrocephalus, and other conditions in which intracranial pressure is much increased. There are many hypotheses to account for it, the most probable being that it is of purely mechanical origin. It is of clinical importance, because an extension of the process to the lumbar region of the cord would account for the loss of the knee-jerk, which is noted occasionally in cases of brain tumor, and which is a common sign of tumor situated in the cerebellum.

REFERENCES.

1. Spiller and Weisenberg. "Paraplegia Dolorosa." University of Pennsylvania Medical Bulletin, 1904.

2. Collier and Batten. "Spinal Cord Changes in Cases of Cerebral Tumor." Brain, 1899, p. 473.

3. Carl Meyer. "Ueber Anatomische Rückenmarks befunde in Fallen von Hirmtumor." Jahrbuch. f. Psych., Bd. XII, S. 410.

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CONGENITAL RENAL ADENOSARCOMA. REPORT OF A BILATERAL CASE.

BY ELEANOR C. JONES, M.D.,

Visiting Physician, Children's Ward, Women's Hospital, Philadelphia.

In a paper read by Jacobi before the International Congress at Copenhagen, 1884, he stated his clinical experience to be that "primary sarcoma of the infant kidney is by no means so very rare as not to deserve more attention than it has hitherto found, and that it may even be found in the fetus." He reviewed the literature relating to the history and nature of malignant kidney tumors in children and cites about 30 cases that have been reported since 1828. He also reported 4 cases observed by him, one of them in an infant who died at birth.

Since Dr. Jacobi's paper was written quite a voluminous literature has developed on this subject. Each writer has his own view as to the histogenesis of these tumors and they have been described by various writers as carcinomata, sarcomata, rhabdomyomata, endotheliomata, etc., according to each writer's conception of the nature of the neoplasm.

Birch-Hirschfeld, in 1898, studied these tumors and cleared up the confusion which had previously existed concerning them. He showed that these malignant renal tumors of early life all belong to one class, which he called "embryonal adenosarcomata." He explained that these tumors contain a mixture of epithelial, adenomatous and connective tissue elements, and that they proliferate in a marked embryonal way. He also states that sometimes the glandular element predominates, and again the connective tissue, and that these different conditions are found not only in different tumors but in different parts of the same tumor. He believes that "embryonal renal adenosarcomata" take their origin in remains of the Wolffian body (primordial kidney) and he gives Eberth credit for first making this suggestion.

Most of the later writers believe that these embryonal renal tumors owe their origin to an inclusion of the neighboring tissues

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within the capsule of the embryonic kidney. L. W. Strong (ARCHIVES OF PEDIATRICS, May, 1903) says that these tumors are both "mesenchymal and mesothelial, the latter appearing in the glandular and the former in the stromatous structures. Apparently both elements are primary and the essential elements, while the cartilages and striped and unstriped muscles are accidental enclosures of the chondrosome and myosome." According to Déspine and Picot (quoted by Montgomery in the Supplement, Encyclopædia Diseases of Children, 1899) in 427 cases of malignant tumors in children, the kidney was the seat of the disease 136 times, and 77 of these cases occurred in the first year of life, showing unmistakably the prevalence of renal tumors in young infants.

Pathology.—These malignant renal tumors of early life contain round and spindle-shaped cells, as do pure sarcomata, as well as epithelial gland elements. They frequently contain muscle tissue, both striped and smooth, in various stages of development, and they sometimes also contain cartilage and bone tissue. They are usually soft and brain-like and frequently contain blood clots, but they may be hard and resistant, according as the amount of connective tissue varies in quantity and density. They generally begin at the pelvis of the kidney. They are primarily extrarenal, but they are intracapsular, for the kidney capsule also encloses the tumor, and as the tumor grows it displaces and compresses the kidney substance, so that the kidney is frequently spread out over the tumor, or sits on the top of the tumor like a "flat-hat." They are generally unilateral, although a number of bilateral cases have been reported. Metastasis is rare and only occurs late in the disease, and then is not extensive. The neighboring lymphatics are not involved, in these respects differing markedly from carcinoma. It is characteristic of these tumors that the ureters are rarely obstructed, and thus is explained the rarity of hematuria and pain.

Symptoms.—These growths are painless, and at first very little disturbance of the general health occurs. Enlargement of the abdomen is usually the first symptom noticed. The appetite and nutrition for a time are well maintained. The urine is generally normal and as the ureters are seldom involved there is no blood in the urine. As the tumor grows it may make sufficient pressure

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on the vena-cava to produce ascites, or edema of the lower extremities, and also enlargement of the superficial abdominal veins. The growth of the tumor is rapid, so that the child generally fails rapidly after a few months; and at the end of its life it may become very much emaciated. There is one peculiar symptom mentioned by Jacobi and others as frequently occurring, it is a semi-

DR. JONES'S CASE OF BILATERAL CONGENITAL RENAL ADENOSARCOMA.

fluctuation over large sarcomata, containing no cysts, but where the tumor is solid. The mistake of supposing that a cyst exists has frequently been made.

A differential diagnosis has to be made from hydronephrosis, especially when the tumors are congenital. When the tumor is left-sided a differential diagnosis has to be made from enlarged spleen due either to malaria, leukemia or syphilis; and sometimes

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these kidney tumors have been confused with ovarian tumors, and hypertrophied mesenteric glands.

Treatment.—In an elaborate table of sixty nephrectomies performed in the last twenty years for malignant kidney tumors in children, collected by Emily Lewi, in ARCHIVES OF PEDIATRICS, February, 1896, she found 16 cases where there was no return reported. So that in unilateral cases surgery may offer some slight hope of cure, when performed early in the disease.

The case I have to report occurred in a male infant of seven months, whose weight was 19½ pounds. D. McC. was the first-born of healthy parents. He was born on February 21, 1905. His maternal grandmother and great-grandmother both died of cancer. He was a breast-fed child, and had always been in good health, until last August when he was taken to Dr. Ida E. Gaston for some slight bowel trouble. She discovered a tumor in each side and drew his mother's attention to them. His mother then said that his abdomen had been large from birth, but that he had no pain, and had not been sick until this bowel trouble in August. I first saw him on September 18, 1905. He looked like a well-nourished infant of seven months. He had two teeth; his testes were not descended, and his fontanel was large and the sutures marked. A large tumor was present in both right and left iliac fossæ. The left tumor was the larger and gave the sensation to the examining hand of slight fluctuation at its upper part. The abdominal recti muscles were separated about two inches. The abdominal veins were distended. The mother said the child at times passed a great deal of urine and at other times very little. The urine was examined and showed a heavy cloud of albumin, and microscopically a few leukocytes and amorphous urates. The blood examination showed polymorphonuclear, 50.4 per cent.; small lymphocytes, 37. per cent.; large lymphocytes, 7.4 per cent.; eosinophiles, 3.2 per cent.; mast-cells, 2 per cent.; no nucleated reds.

A provisional diagnosis of sarcoma of both kidneys was made, but on account of the apparent fluctuation in the upper part of the left tumor, and because of the history of intermittent copious urination, it was decided to make an exploratory incision. This was made on September 22d, but only a solid tumor was found. The baby died of shock in about eighteen hours. The autopsy showed all the organs except the kidneys, apparently in a normal

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CONGENITAL RENAL ADENOSARCOMA—PHOTOGRAPH SHOWING KIDNEY TISSUE INCISED AND SPREAD OUT ON TOP OF CONGENITAL RENAL TUMORS.

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condition, a large tumor involving a kidney was present in each side of the abdomen. These tumors were removed and sent to Dr. Adelaide W. Peckham, Director of the Clinical Laboratory, Women's Hospital of Philadelphia, for examination, and I am indebted to her for the following careful report. "The right tumor weighs 1 pound 8½ ounces. Macroscopic appearance.—The tumor consists of a large, very hard, yellowish-white mass, having the appearance of a fibroid tumor, and a smaller mass of the same appearance, which is separated from the first by a partition wall, but both are enclosed in the same capsule; superimposed upon this mass is the small kidney, a portion of its tissue being pressed out and flattened over the surface of the tumor. The flattened kidney mass with its capsule is adherent to the capsule of the tumor, so that the kidney capsule also encloses the tumor, but the tumor is easily separated from the fused capsules. The ureters are not involved and the pelvis of the kidney seems normal in size and appearance.

"The left or larger tumor weighs 1 pound 10 ounces. The tumor is much like the first, being made up of two large rounded, hard masses, somewhat nodular, enclosed in a capsule, and separated by a thin partition. The centre of this growth shows a purplish area which contains fasciculi of muscle. There are no degenerated areas in either tumor. The kidney of this side seems somewhat smaller than that of the other because more of its tissue is spread out over the surface of the tumor. Both kidneys seem to be fairly normal in structure, both as regards cortex, medulla and pelvis.

"Microscopic Examination of Tissue.—Sections from different portions of the tumor vary greatly in appearance. Some from the hardest portions of the tumor are made up of dense connective tissue with muscle fibres running through it in all directions. Interspersed are a few masses of sarcoma cells and very rarely what appeared to be an epithelial-lined tubule in cross section. Other areas are mostly made up of masses of round and spindle-shaped cells, with patches of considerable numbers of epithelial tubules. Still others show large areas of myxomatous degeneration. The muscle fibres, or at least a portion of them, are striated.

"Kidneys.—In the central portion of each kidney the cortex and medulla seem fairly normal in structure. The tissue flattened over the tumor and adherent to the capsule shows very little

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kidney tissue. Sections through both capsule and the tissue upon the surface show masses of irregular tubules with their epithelium and large masses of round-sarcoma cells together with connective tissue."

REFERENCES.

1. Jacobi, A. Primary Sarcoma of the Fetal and Infant Kidney. Transactions International Congress. Copenhagen, 1884.

2. Windle, B. C. A. Journal Anatomy and Physiology, Vol. XVIII. London, 1884.

3. Lewi, Emily. The Present Status of our Knowledge of the Diagnosis, Prognosis, and Treatment of Sarcoma of the Kidney in Children. ARCHIVES OF PEDIATRICS. February, 1896.

4. Wentworth, A. H. Two Cases of Malignant Growths in the Kidney. ARCHIVES OF PEDIATRICS. May 1896.

5. Birch-Hirschfeld. Beiträge zur Pathol. Anat. d. Nierengeschw. Ziegler's Beiträge. Vol. XXIV., 1898.

6. Herzog and Lewis. Embryonal Renal Adenosarcoma. American Journal of the Medical Sciences. Vol. CXIX., 1900.

7. Sutton, J. Bland. Tumors, Innocent and Malignant. Third Edition, 1903.

8. Strong, L. W. Congenital Tumors of the Kidney. ARCHIVES OF PEDIATRICS. May, 1903.

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INTERESTING BACTERIOLOGICAL FINDINGS IN A CASE OF ULCER OF THE HARD PALATE ASSOCIATED WITH ACUTE NEPHRITIS IN AN INFANT AGED TWO AND ONE-HALF MONTHS.

BY SAMUEL McC. HAMILL, M.D.,
Philadelphia.

I desire to place the following case on record because it represents an unusual, if not unique, form of bacterial infection.

An Italian infant, S. M., aged two and a half months, was brought to my Clinic in the Howard Hospital on the 8th of March, 1905. The mother spoke very little English, which accounts for a defective history and the recording of an incorrect street address, which prevented our following up the patient after the mother stopped bringing it to the dispensary.

The parents were living and well; there were no other children in the family.

The patient's birth was normal; it had been breast-fed irregularly, and had had no convulsions or other illness.

At the age of one and a half months, it developed fever and a cough. The cough was said to be tight, accompanied by a whoop and sometimes followed by vomiting. The infant never coughed voluntarily during its several visits to the dispensary, nor were we able to induce a cough. Vomiting occurred after each nursing independent of the cough. There was no difficulty in suckling. The bowels were moved once or twice daily. The stools were hard and greenish in color. There was no evidence of pain.

Twenty days prior to coming to the dispensary, the feet began to swell. No swelling had been observed in any other part of the body. On the fifth or sixth of March (three days before admission) some redness was noted on the cheeks and chest, which lasted for one day.

The physical examination showed a fairly well nourished infant. The head was small; the sutures and posterior fontanel were closed; the anterior fontanel measured about 1 x 1 inch; there was no craniotabes.

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The skin was pale, generally relaxed except in the legs and feet, where there was a marked edema which pitted readily on pressure. There were a few small reddish scattered papules over the forehead, face and buttocks, and the skin over the latter was reddened apparently from the effect of wet napkins. There was no scaling of or eruption on the skin of the hands, there was no coryza. The mucous membranes were pale and the sclera pearly. The tongue was heavily coated with a grayish fur and rather dry. On the left posterior portion of the hard palate there was an irregularly oval, ulcerated area about ¾ by 1 inch in its diameters. It was covered with a grayish yellow exudate which was not elevated above the mucous membrane. It was tough and tightly adherent. There was a scarcely perceptible zone of redness around the ulcer. There was no redness, ulceration or exudate elsewhere in the mouth or the visible portions of the throat.

The heart and lungs were normal. The abdomen was much distended and its superficial veins prominent, especially on the right half. The spleen was greatly enlarged and firm; it extended to the transverse umbilical line. The liver also extended to the transverse unbilical line. The abdomen was soft beyond the borders of the liver and spleen and no other masses were felt. There was no tenderness.

During the examination the child had a loose greenish stool, containing fecal matter and mucus. At the same time it voided a large quantity of straw-colored fluid, a small portion of which was collected and examined, and found to contain a moderate quantity of albumin. A microscopic examination was not made. The rectal temperature was 99.2° F.

On the 9th of March, the edema had extended to the thighs and scrotum; otherwise the condition was unchanged. On the 10th of March, Dr. Thomas A. Cope kindly made a culture for me from the ulcerated area and a few days later a culture from the urine.

On the 11th of March it was noted that the edema was the same. The ulcer had extended in the form of small whitish delicate outshoots from various points in its circumference. The bowels continued loose and the stools of the same character; the vomiting had ceased, and urine, which stained the napkin a dark color, was voided about four times in the twenty-four hours. Two days later the symptoms had generally improved, the ulcer was a little smaller and the axillary temperature was 97.2° F.

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The infant was returned on the 15th and 17th, after which it was lost sight of. On the latter occasion, the general condition was about the same, but the ulcer had diminished in size.

The cultures were studied conjointly by Dr. Cope and Dr. J. S. Evans, and their report follows:—

"The cultures obtained from the ulcer of the hard palate and the urine were identical. They showed a coccus in pure growth with the following characteristics:—

"*Morphology.*—The cocci are arranged in diplococcic forms and have a tendency to gonococcoid form.

"*Staining.*—They are positive to Gram's method.

"*Cultures.*—On *agar slants* the growth is slightly raised, whitish yellow, with thin borders.

"In *gelatin stab* there is a growth along the entire depth of the stab which is yellowish brown and beaded. The surface growth is flat and spreading, becoming sunken in forty-eight hours and later producing a funnel-shaped liquefaction. The liquified gelatin contains a yellowish sediment. In *glucose, saccharose* and *lactose agar* there is no gas formation.

"*Litmus milk* is rendered acid, but is not coagulated. On *potato* there occurs a grayish yellow growth. Inoculations of the cultures into guinea-pigs produced no symptoms either local or general. When the pig was killed at the end of forty-eight hours, no cultures could be obtained, showing that the organism had been killed by the animal's resistance.

"The conclusions reached in this report are as follows:—

"Morphologically and culturally the organism corresponds to Klein's micrococcus hemorrhagicus, but its non-pathogenicity to guinea-pigs marks it as distinct."

The micrococcus hemorrhagicus, described by Klein, was re covered by him from a vesicular eruption appearing on the hands of three men who had been skinning sheep, which had died of a puerperal disease known as "gargle." This microorganism, as far as I have discovered from a search of the literature, has not been found in any condition other than that described by Klein, and whilst, in my case, the history has not definitely excluded the possibility of exposure to this disease, it is unlikely that the infant had met with such exposure. It had been born and had always lived in the city and it was nourished exclusively at the mother's breast. Therefore, aside from the difference in the pathogenicity

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of these two organisms, the unlikelihood of any exposure is further evidence against the identity of these two organisms.

According to the present known methods of classification, it has been impossible to definitely identify this microorganism. On account of its striking difference from Klein's micrococcus hemorrhagicus, as to its pathogenicity for guinea-pigs and its dissimilarity to other described cocci in other respects, it is probable that we are here dealing with a previously undescribed member of the genus diplococcus.

The coincident finding of this microorganism in the culture from the mouth and that from the urine can leave no doubt as to its etiologic relationship to the local and kidney lesions. How long the ulcer had existed and what relationship the marked anemia and the enlargement of the spleen and liver bore to the infection is difficult to determine. Unfortunately, we lost sight of the patient before the bacteriological report reached us; otherwise, we would have endeavored to obtain cultures from the blood. Marked enlargement of the spleen with severe degrees of anemia are so common in Italian infants that their presence here may have been coincident. On the other hand, the case suggests the advisability of a more careful search for some infectious origin for these not infrequent cases of infantile anemia.

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A CASE OF INTUSSUSCEPTION IN A CHILD OF SIX MONTHS; OPERATION; RECOVERY.

BY ALFRED HAND, JR., M.D.,
Philadelphia.

It is a source of great regret to me that I am unable to present this report in conjunction with my surgical colleague, the late Dr. Edmund W. Holmes, but I esteem it a privilege to mention the rapidity and gentleness with which he did the operation, two factors which contributed largely to the successful result.

The patient, a breast-fed male infant, six months old, was admitted to my service in the Methodist Hospital at 9:30 P.M., May 30, 1905, with the history that at noon of the preceding day, while sitting in his high-chair, he was seen by his mother to fall forward suddenly, as though he had received an unseen blow; this was followed immediately by vomiting and a movement of the bowels. A dose of castor-oil was given but the vomiting continued and the movements were bloody. This history, being given to me over the telephone, I inquired as to the presence of a mass along the line of the colon, and receiving an affirmative reply, requested that the surgeon on duty, Dr. Holmes, be asked to meet me in consultation. On examination the child presented the classic appearance of acute intussusception—the eyes sunken and rolled up, showing the conjunctivæ, the abdominal lines of the face marked, giving the peritoneal facies; the abdominal walls relaxed and allowing the sausage-like tumor to be palpated easily in the line of the descending colon; the stools typically free from fecal matter and consisting only of blood-stained mucus. Rectal examination was confirmatory, and, awaiting the arrival of the surgeon, 15 drops of paregoric were given.

To my own touch the constriction seemed to be too great to be overcome by hydrostatic pressure from below, but at Dr. Holmes's request I administered an injection of water from a fountain syringe elevated two feet above the body, kneading the mass gently at the same time. After a fair trial this was unsuccessful, and preparations were made for a laparotomy, the anesthetic, nitrous oxid, being started at 12:40 A.M. The notes are

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silent on this point, but it is my recollection that only nitrous oxid was used throughout the operation. I can present the surgical side only incompletely, but the incision was in the middle line, and it seemed to me that the reduction of the intussusception was not an easy task. It was apparently accomplished more by manipulation of the mass, causing expulsion, than by traction on the small intestine. At any rate, the time necessary to do it made perfectly clear why the enema did not succeed.

Just after the operation had been started a hypodermic injection was given, containing $^1/_{100}$ grain of morphin and $^1/_{2000}$ grain of atropin, and from the start of the anesthetic to the completion of bandaging, thirty-five minutes elapsed, the child's condition when put to bed being: Temperature 103.6° F., pulse 188, respiration 52. By the next evening the temperature was 99° F., pulse 136, respiration 24, and the further course of the case was quite uneventful, the daily range of temperature being from 98° to 100° F. The bowel movements numbered two or three a day, being composed of greenish mucus, but with the administration of bismuth salicylate their character became normal and the number lessened to one, or occasionally two, daily. For the first day after operation, barley-water was given in dram doses, then increased to 2 ounces hourly, with the addition of 5 drops of liquid peptonoids. In a few days equal parts of whey and barley-water were well tolerated, and shortly afterwards breast-feeding was resumed, as the mother lived not far from the hospital. The stitches were removed on the eleventh day and the child was discharged in a healthy condition nineteen days after admission.

There are but two points which I wish to emphasize, in conclusion, the first, my belief that, having made preparation for laparotomy, it is wise to attempt reduction by enema, but if unsuccessful to operate at once; the second is to give a dose of opium at once, as soon as the diagnosis is made. In acute intussusception there is no such tendency, as exists in the chronic form to a certain degree, for the bowel to release itself from its own grasp, but the constriction becomes tighter and tighter, unless opium comes in with its calming influence. It is conceivable that in the few hours usually elapsing under the most favorable circumstances between the diagnosis and operation the effect of opium, in relaxing the already existing spasm or only in preventing a greater degree, might spell the difference between a successful and an unsuccessful outcome.

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TWO CASES OF FECAL IMPACTION IN TYPHOID FEVER, IN CHILDREN, SIMULATING GRAVE ABDOMINAL LESION.

BY D. J. MILTON MILLER, M.D.,
Philadelphia.

Because of their bearing upon the subject under consideration this evening, namely, surgery of the abdominal affections of early life, it has seemed to me quite appropriate to report 2 cases, which, for a brief period, simulated a grave abdominal condition. Fecal impaction, which these cases illustrate, is not a common occurrence in childhood or infancy, although severe constipation is often troublesome enough to constitute a real affection. Following typhoid fever, however, as did the cases I report, fecal impaction occasionally is met with; still, not as frequently as one would expect, considering the usual diet, viz., milk, and the prolonged fever and consequent muscular weakness—ideal conditions to invite intestinal atony, the principal etiological factor in the disorder.

Practically no mention of fecal impaction can be found in textbooks and papers on typhoid fever, although Musser refers to it as one of the complications. This seems strange; for, as will be seen by the histories about to be given, the condition may give rise to decided, and, for a time, almost alarming symptoms, which, if not rightly interpreted, may easily lead the unwary astray. Notwithstanding that most pediatric works are silent on the subject, the majority of the cases of fecal impaction in typhoid fever appear to occur in childhood. All of Henry's* 4 cases were in early life; 2 at seven, 1 at twelve, and 1 at fifteen years.

My first case was a girl of twelve years. The patient had a typical, though mild, attack of typhoid fever; the temperature ranging between 102° to 103° F., and reaching normal on the seventeenth day. During the height of the attack the leukocytes numbered 5,800. The diet consisted of milk and lime-water. Up to the onset of the symptoms of fecal impaction, the bowels were

* *American Journal Medical Sciences*, N. S. CXXIV, 1902, p. 64.

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constantly constipated, requiring daily enemas; no cathartics by the mouth being given. On the twenty-ninth day, after she had been sitting up in bed for four days, the child was suddenly seized with severe abdominal pains, extending over the whole abdomen, but more marked over the cecum. The abdomen was everywhere painful on pressure, slightly distended, but without

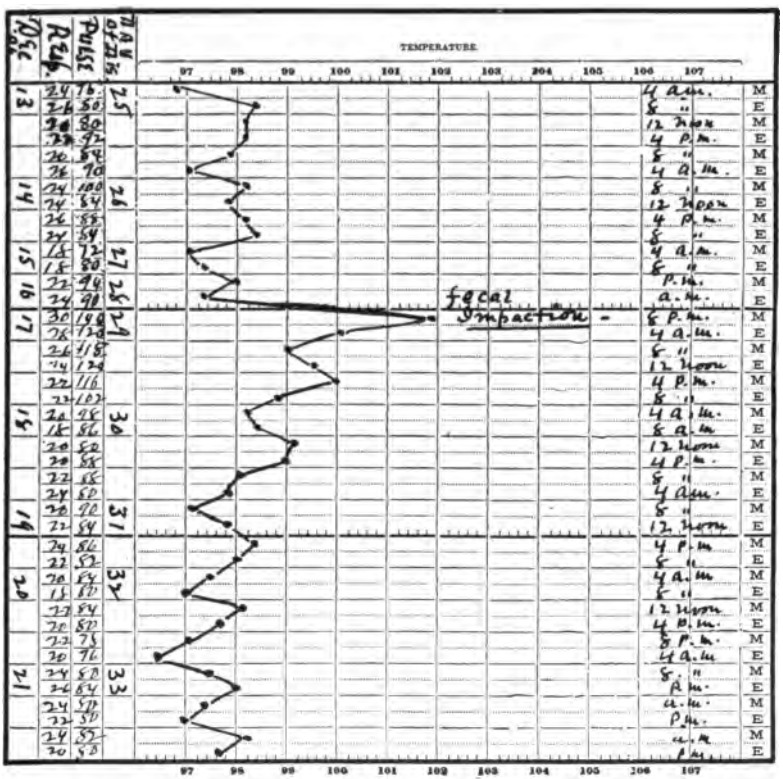

CHART A.—FECAL IMPACTION IN TYPHOID FEVER; PATIENT AGED 12 YEARS.

change in liver dullness. Simultaneously there was vomiting; a rise of temperature (which had been normal for twelve days) to 102°F. (Chart A); of the pulse from 72 and 80 to 140; and of the respiration from 16 and 20 to 28. Dr. T. R. Neilson saw the patient, and thought he detected slight rigidity on the right side, and somewhat greater tenderness at McBurney's point. Shortly after the onset, an almost continuous liquid diarrhea supervened. This led to examination of the rectum, which was found completely

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filled with hard, scybalous, fecal masses; it was probably owing to its great tenderness that their detection through the abdominal wall had been impossible. Calomel, citrate of magnesia and oil enemata were given freely; but it was not until the next day that the bowel was completely emptied. At this time (second day) the temperature was 100° F., the leukocytes, 13,600. On the third day recovery was complete, although the leukocytes still numbered 10,000. At first this patient was thought to have a possible perforation. Afterward, when Dr. Neilson saw her, he considered that the symptoms depended upon an acute appendicitis; but their immediate disappearance, as soon as the bowel was relieved of its irritating contents, quickly dispelled these ideas, in spite of the localized pain, apparent rigidity and marked leukocytosis.

In the second patient, a boy of ten, the attack of typhoid fever, as well as the symptoms attending the impaction, were more severe than in the first case. The temperature ranged around 104°F. for some time, there was severe bronchitis, and an old mitral lesion. Constipation was present throughout the whole attack and during convalescence, the bowels being opened by daily enemata. The diet consisted of milk and lime-water. The leukocytes numbered 11,000 (*i.e.,* during the early days). On the twenty-eighth day the temperature was normal, and on the thirty-sixth the patient sat up. Four days later (on the fortieth day) he complained of abdominal pains, which rapidly became severe. Tenderness was universal, but more marked over the cecum. There was no rigidity and only slight distension. No mass could be discovered, nor especial appendiceal tenderness, nor change in liver dullness. Vomiting was frequent and severe, and the temperature rose quickly to 102½°F. (Chart B), the pulse to 140, the respiration to 32. Later the expression became anxious, the pulse small and weak and the extremities cold. The leukocytes were 28,000. As in the first case, a liquid diarrhea rapidly ensued, and a rectal examination revealed large and desiccated fecal masses almost completely blocking the bowel. Calomel, citrate of magnesia and oil enemata, coupled with manual extraction, succeeded in completely emptying the bowel in about twenty-four hours. With this the symptoms at once subsided, although the temperature did not become quite normal until the fourth day. When the abdominal symptoms were at their height the leukocytes, as stated above, were 28,000;

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at 3 P.M. on the second day, after the bowels had begun to be relieved, they were 15,000; at 5 P.M. 14,000; the next day, after full evacuation, they fell to 8,000.

The abrupt onset in this case, as well as the character and severity of the symptoms, caused us at first to think that some grave abdominal accident had occurred. I was for a time quite

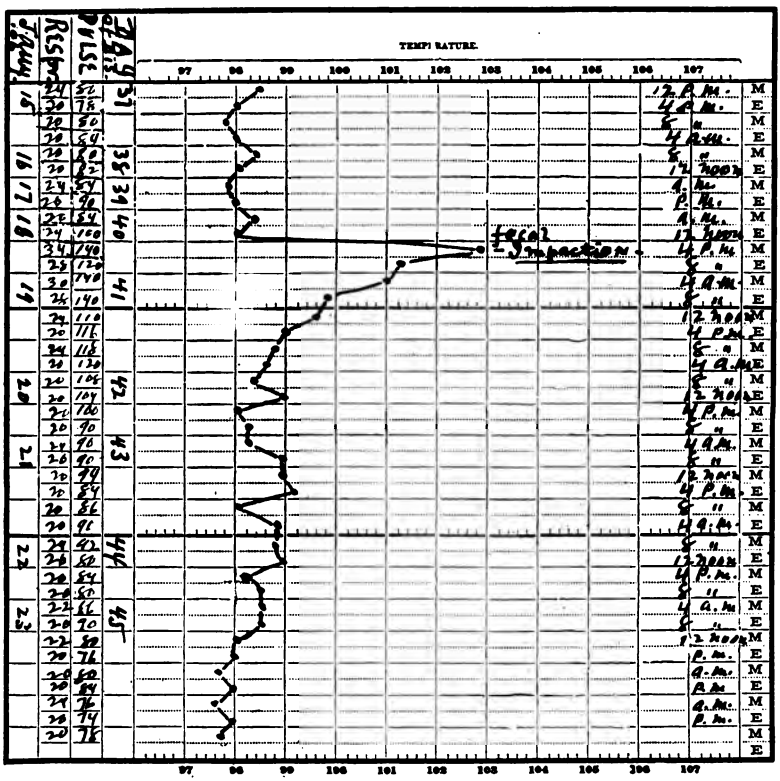

CHART B. – FECAL IMPACTION IN TYPHOID FEVER; PATIENT AGED 10 YEARS.

puzzled and anxious—but apart from other contradictory signs, the presence of almost continuous liquid diarrhea, which, from past experience, I knew to be a very constant symptom in fecal impaction, led to the discovery of the real nature of the attack. This diarrhea is doubtless dependent upon the hyperemia of the mucous membrane induced by the irritation of hard, fecal masses. The leukocytosis noted in these patients is interesting; but may be readily accounted for by the well-known sensitiveness of the

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blood in children, and by the fact that the enteritis and colitis of early life are usually attended by a leukocytosis of from 15,000 to 30,000 (Cabot's tables).

If one felt inclined to draw any lessons from the histories above detailed, they would be somewhat as follows: (1) Fecal impaction is sometimes the cause of serious abdominal symptoms in children convalescing from typhoid fever. (2) When constipation persists throughout the active and convalescent stages of typhoid fever, enemas are not sufficient, as they simply unload the lower bowel, often leaving the rest of the intestine untouched; in addition, occasional laxatives by the mouth should also be employed. (3) An exclusive milk diet is not advisable when constipation persists in typhoid fever; besides beef juices and broths, the milk should be mixed with cereals or preparations of malt. (4) In children, leukocytosis is of little significance in real or apparent instances of serious abdominal trouble, as it may be quite marked from slight causes, and where no suppuration or active inflammation is present. (5) A frequent liquid diarrhea in a person habitually constipated, or following typhoid fever, should always excite suspicion of fecal impaction.

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THE FOOD VALUE OF WHEY-PROTEIDS.

BY C. F. JUDSON, M.D.,
Philadelphia.

From the Pepper Laboratory of the University of Pennsylvania.

Whey-cream mixtures, whey-milk mixtures, and whey plain or diluted with water have come into very general use of late years, for that class of infants whose feeding is difficult and who are not able to digest even weak-milk mixtures, and during convalescence from acute inflammatory diseases of the digestive apparatus. Pediatrists have long recognized the value of whey. Its chief advantages are that it is free from the insoluble casein that forms tough clots in the child's stomach, and that it contains soluble albuminoids in the form of lactalbumin and whey-proteids. Moreover, it is nearly free from fat (about 0.33 per cent.), and contains about 4.5 per cent. of sugar and the salts of cow's milk. It does not readily sour, if ordinary precautions are taken to keep it clean. The importance is manifest of knowing the exact composition and percentage-value of the nitrogenous proteids in whey, since whey-mixtures play such an important rôle in infant-feeding.

The direct incentive to my investigations of the nitrogen-constituents of whey was furnished by Dr. Grulee's article on "The Albumin Content of Whey," published in the ARCHIVES OF PEDIATRICS for June, 1904. The author gives as the result of twenty-four analyses, 0.5013 per cent. as the average albumin content of whey (with variations from 0.2928 to 0.6616 per cent.). Since he states (p. 412) that albumin exists in whey "in three forms: casein, lactalbumin, and lactoglobulin," it is fair to assume that, by albumin, the author means to designate not merely the lactalbumin, but also the other soluble proteids present in whey. The low percentages obtained by Dr. Grulee naturally suggested the possibility of an error in the method used, and that all the proteids present in whey could not have been extracted in this analysis. Before recounting the experiments (which were made in the Pepper Laboratory of the University of Pennsylvania), it may be well to state that the nitrogenous constituents of cow's milk are casein, lactalbumin, lactoglobulin, Storch's mucoproteid, and galactase (a ferment discovered by Babcock and Russell). The latter three ingredients are found in such small quantities that in estimating the proteids of milk one need consider only the casein and the lactalbumin. The whey-proteids compose the

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lactalbumin and the lactoglobulin, besides a soluble proteid similar to albumin, split off from the casein by the action of the rennet ferment (Leffmann). This soluble proteid is an important constituent of whey. The proportion of lactalbumin in cow's milk (all of which remains in solution in whey) is not constant. H. Droop Richmond, the eminent English authority on dairy chemistry, gives the average percentage of lactalbumin present in cow's milk as 0.40 per cent. (on the basis of 200,000 analyses). This figure corresponds with the results obtained by Lehmann, Klimmer, and other German analysts, who found variations from 0.30 per cent. to 0.50 per cent. Van Slyke states that cow's milk contains higher percentages of lactalbumin during the seventh, eighth and ninth months of lactation, averaging 0.80 per cent.; but that it averages about 0.50 per cent. during the first three months after calving. His general average, 0.70 per cent., is higher than that found by other analysts. It is based on analyses made by the United States Agricultural Experiment Stations.

The most recent and reliable analyses of the nitrogen content of whey are those of König (0.85); Fleischmann (1.00); Rupp (1.00); Vieth (0.92); White and Ladd (1.00), and the Wisconsin Agricultural Experiment Station (1.00), running from 0.85 per cent. to 1.00 per cent. Dr. Grulee's average of 0.50 per cent. albumin may be considered correct, if by that term the lactalbumin in whey is alone designated, but it does not represent the total proteid content of whey. To demonstrate this fact, Dr. Grulee's method of analysis, namely, precipitation by heat and weighing of the dried albumin, was repeated step by step. The whey was coagulated with Parke, Davis & Company's solid rennin, one grain to the quart of skimmed milk; heated to 65°C., and filtered. To 25 c.c. of the filtrate, 1 c.c. of acetic acid and 3 to 4 drops of ammonium hydroxid were added; then distilled water, up to 100 c.c. The whole was then boiled and allowed to stand until the coagulated albumin had settled, when the clear supernatant fluid was decanted through a Gooch crucible. Distilled water was added, from time to time, to the albumin in the beaker. This process was repeated until no cloudiness was perceptible after the application of heat. Finally, the remaining fluid in the beaker was kept for half an hour at a high temperature (below boiling point). (After the third decantation, Dr. Grulee allowed the albumin to pass into the crucible, where it was washed three times. The crucible was then dried in the oven at 105°C., cooled, and

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weighed; and this process continued until no difference in the weighings was registered.) In my experiments, the clear supernatant fluid, which was decanted through the Gooch crucible, was tested by Millon's reagent and the other tests for albumin, and invariably gave a positive reaction. I therefore determined by the Kjeldahl method the percentage of nitrogen in the decanted fluid in eight instances, and found an average nitrogen content of 0.084, calculated as proteid 0.539 per cent. The figures are as follows:—

0.067	0.085
0.067	0.089
0.089	0.089
0.089	0.100

There then arose the question: Did this amount of nitrogen (0.084 per cent.) represent that present in the whey-proteid split off from the casein by the rennet ferment? Probably the larger portion of it was contained in the soluble whey-proteid or whey-casein (as I may call it), but not all. Lactalbumin is coagulated by heat, from 70° C. up; but even prolonged boiling will not certainly precipitate all the lactalbumin present. A certain portion of it, therefore, may have been present in the filtrate through the Gooch crucible.

To determine the total amount of nitrogen in whey, the following method was used: One pint of skimmed milk was heated to 105° F.; one one-grain rennin-tablet (Parke, Davis & Company) was added. After standing half an hour, the whey was strained through three layers of cheesecloth and heated to 65° C. (150° F.) to destroy the enzyme; it was then filtered once. The results of eight analyses by the Kjeldahl method were as follows:—

	Nitrogen.	Proteids.
	0.174	1.100
	0.146	0.929
	0.166	1.055
	0.176	1.110
	0.17	1.090
	0.159	1.000
	0.162	1.020
	(0.136 overheated to 70° C.	0.86)
Average..	0.163	1.043, excluding last analysis.

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The results of these analyses correspond so closely with those of the most reliable authorities (König, Fleischmann, Vieth, Droop-Richmond, Rupp, White and Ladd, and the United States Agricultural Experiment Stations) that 1 per cent. may be accepted as expressing the average total nitrogen-content of whey as ordinarily prepared. In order to determine what proportion of the total nitrogen present was in the form of extractives (non-proteid), the same preparations of whey (not filtered) were saturated with excess of granular zinc sulphate, after the addition of 2 per cent. sulphuric acid, in order to precipitate all the casein and albumin present. The filtrate was then examined by the Kjeldahl method, and showed an average content in nitrogen of 0.031. The results of the eight analyses were .012, .02, .02, .025, .04, .041, 0.41 and .043 nitrogen. Subtracting the amount of nitrogen extractive from the total nitrogen, we get an average proteid content of 0.85-0.90 per cent. While the number of analyses made was not large, the results obtained may be considered to show that the food-value of whey prepared in the ordinary manner is a fairly definite one, represented by a proteid content of 0.85 to 0.90 per cent., consisting of soluble whey-casein (whey-proteid) and whey-albumin. The lactalbumin probably represents more than half of the proteid content of whey.

In connection with these experiments, it is of interest to note that higher percentages of the whey-proteid are obtained when we use skimmed milk, instead of whole milk. The kind of milk used seems to make little difference in the amount of soluble proteid obtained, certified milk not yielding any larger percentages than that bought in the small milk store. In order to obviate the possibility of any inhibition of the action of the rennet by the alcohol and glycerin present in the liquid preparations, Parke, Davis & Company's solid rennin tablets were used. To insure the greatest possible separation of the casein, an excess of rennin was used in the last series of experiments; one grain to the pint of milk, instead of one grain to the quart, as is usual. In conclusion, I wish to thank Prof. Henry Leffmann and Prof. D. L. Edsall for their valuable advice and assistance, and for their supervision of the laboratory work.

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THE RELATIVE FREQUENCY OF HEART DISEASE IN CHILDREN IN DIFFERENT COUNTRIES.

BY GEORGE WILLIAM NORRIS, A.B., M.D.,

Assistant Visiting Physician to the Philadelphia General Hospital; Instructor in Medicine at the University of Pennsylvania; Physician to the Henry Phipps Institute for the Study, Prevention and Treatment of Tuberculosis; Fellow of the College of Physicians of Philadelphia.

Some time ago, in the course of a conversation, Dr. Hobart A. Hare remarked to me that, while studying in England, he had gained the impression that heart disease in children was considerably more frequent in that country than in the United States. I determined to investigate this subject, and was greatly surprised to find that nearly all text-books dealing with heart disease are entirely silent upon both the actual and the relative prevalence of this condition.

From such references as were accessible, I have gleaned the following facts which are set forth with the full realization that no authoritative conclusions can be drawn from such a small number of cases:—

The reports of the Children's Hospital in Philadelphia, from 1887 to 1903, show an aggregate of 11,735 admissions; of these, 168 were cases of heart disease (1.4 per cent.). In St. Christopher's Hospital, from 1890 to 1903, there were 3,087 admissions, with 34 heart cases (1.1 per cent.). At the Children's Hospital in Boston, among 1,298 admissions, there were 26 cardiac cases (2.0 per cent.).

Through the kindness of Mr. Stewart Johnson, I received the following data relating to the Great Ormond Street Hospital for Sick Children in London:—From 1889 to 1904, among 27,950 admissions, there were 820 cases of heart disease (2.9 per cent.). The relationship of the frequency of cardiac lesions between the last-named institution and the three American hospitals is as 2.9 per cent. to 1.4 per cent.

About the same proportions as those last named were found in the Northeastern Hospital for Children in London, where in 1902, among 732 admissions, there were 21 cases of heart disease (3.0 per cent.).

Still higher proportions were found in France. E. Weill found 284 instances of cardiac disease among 6,020 admissions

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(4.7 per cent.); and Bouchut, in 200 autopsies on children dead of acute diseases and trauma, encountered 187 cases of vegetative endocarditis.

In Germany, on the other hand, Dusch encountered only 87 cases in 52,281 reports collected from different hospitals (0.17 per cent.). Very similar figures are given by Pott, who, among 30,000 children, found but 95 heart cases (0.32 per cent.); and by Cassel in Berlin, who collected 107 heart cases among 20,000 children (0.5 per cent.).

In regard to the relative frequency with which the two sexes are the subjects of cardiac disease, the statistics which I have collected indicate that congenital lesions are pretty evenly divided, between the males and females, but that the acquired varieties are more frequent among the latter. The explanation of this is perhaps to be found in the fact that chorea is more common in girls.

As to the frequency of congenital heart disease: Cassel found in 107 autopsies on children dead of cardiac disease, 77 instances in which the disease was certainly not congenital, thus leaving 2.8 per cent. as possibly congenital; Hochsinger, in 62 cases, found 9.7 per cent.; and Weill, in 281 cases, 2 per cent. of the last-named variety. At the Great Ormond Street Hospital, 8.6 per cent. were tabulated as congenital; at the Northeastern Hospital, 4.7 per cent.; and at the Children's Hospital in Philadelphia, 11.8 per cent.; making a total of 97 among 1,272 heart cases (7.6 per cent.).

Observer.	Total.	Boys.	Per cent.	Girls.	Per cent.
ACQUIRED HEART LESIONS.					
Dusch,	42	24	59.5	18	40.4
Steffen,	95	48	50.5	47	49.4
Hochsinger,	53	24	43.3	29	54.7
HEART LESIONS—ALL VARIETIES.					
Pott,	95	36	37.9	59	62.1
Chapin,	76	26	34.2	50	65.8
Sansom,	136	59	43.3	77	56.7
Zappert,	100	40	40.0	60	60.0
CONGENITAL HEART LESIONS.					
Cassel,	26	13	50	13	50
Vierordt,	543	320	59	223	41

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It would seem, therefore, that heart disease in children is less frequent in Germany than in the United States; less frequent in this country than in England; and less frequent in England than in France. Congenital lesions, on the contrary, would seem to be more common with us than abroad.

These conclusions are drawn, however, without any conviction as to their accuracy; but with the full realization that no exact information can be deduced from such a small number of cases. The statistics have been collected and are put on record merely as a nucleus for future additions.

BIBLIOGRAPHY.

Weill. Grancher et Comby, Maladies des Enfants, p. 809.
Dusch. Gerhardt's Handbuch der Kinderkrankheiten, 1878.
Cassel. Zeit. f. Klin. Med., Vol. XLVIII., p. 389.
Pott. Fortschritte in d. Med., 1895, p. 893.
Chapin. Transactions New York Academy of Medicine, 1880.
Zappert. Wien. Klin. Woch., March 3, 1903.
Cheney. Journal American Medical Association, 1905, p. 617.
Sansom. Medical Times and Gazette, 1879, Vol. II., p. 227.
Steffen. Klinik d. Kinderkrankheiten, 1889, Vol. III., 1889.

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CHRONIC LYMPHATIC LEUKEMIA IN A CHILD.

BY DR. THEODORE LE BOUTILLIER,

Instructor in Pediatrics, Polyclinic Hospital; Dispensary Physician St. Christopher's Children's Hospital; Registrar Children's Hospital Dispensary, Philadelphia.

Albert J., ten-and-three-quarters years. First seen at the Medical Dispensary of St. Christopher's Hospital on September 6, 1905.

Family History.—His father and mother were healthy. No other children living; two girls died during infancy of intestinal trouble. There had been no miscarriages. His mother's brother, sister and father died of phthisis, also his father's brother. When the mother was seventeen years old, she complained of general weakness, anemia, loss of appetite, and a craving for sweets and pickles, her face was of a greenish color, at which time she was confined to the house for four weeks. She apparently recovered, and is now in normal health. There is no specific history; no heart or kidney diseases, no carcinoma.

Previous History.—No history of convulsions or intestinal trouble up to two years of age. From that time until seven years, he had frequent attacks of diarrhea, which were followed by constipation. He has had measles and pertussis. He has complained of abdominal pain at times (growing pains). During the spring and summer he passed a little blood in stool, and had several slight nasal hemorrhages, which were easily controlled at home by packing.

Present Illness.—He seemed in his normal health until a week ago, at which time he complained of headache, malaise and drowsiness in the afternoon, aching of his limbs and loss of appetite. At that time a swelling on both sides of the neck was first noticed, that on the right side larger than the left. For some time past he had been restless at night, frequently talking in his sleep, and snoring. It is stated that during the summer, he was playing constantly in the yard with a tub of water, and that he was wet most of the time. It was thought that during this time (two months ago) he began to look paler than normal, and that a digestive disturbance commenced.

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Physical Examination.—Temperature, 101½° F.; pulse, 102; respiration, 30. Fairly well nourished and muscular development good. Marked pallor. Slight puffiness about the eyes. All cervical glands slightly enlarged, those on the right side from a split pea to a large almond; on the left, from a split pea to a bean in size. Submaxillaries on both sides about the size of a large unshelled almond. Axillary glands from a split pea to a pea. Epitrochlears palpable, and inguinals from a pea to a bean. Tongue is moderately coated, tonsils not enlarged; slight redness of the fauces, no exudate. Lungs are negative to percussion and auscultation. Heart: apex in the fifth space just without the midclavicular line. Area of the cardiac dullness at the lower border of the second rib; right border at the right edge of the sternum, and left border just without the midclavicular line. Wavy impulse visible over the fourth and fifth left interspaces. Heart action moderately regular and somewhat rapid. In a recumbent posture, there is a late systolic murmur, heard best in the pulmonary area down to the fourth space; less distinctly in the mitral region, and transmitted to the axilla; almost inaudible when upright. There is a loud venus hum; systolic and diastolic in time, heard over the vessels of the left side of the neck. There is an area of impaired resonance over the inner third of the right and left clavicle, and also over the sternum. The abdomen is not distended, and there is very slight iliac tenderness. The spleen is not palpable; the liver is palpable one-half inch below the costal margins in the right midclavicular line.

From that date until the 14th, the only changes noticed were that the headache had disappeared, there was more restful sleep at night, the appetite had improved, and the pulse was regular. There had been four nasal hemorrhages, which were readily controlled. He complained of sharp pains in his right shoulder; also, that the odor of cooking caused nausea. On the 14th there seemed to be less swelling of the face. He was complaining of chilly sensations followed by flushes of heat, and profuse sweating at night. His temperature was 100⅘° F. Adenoids were palpable. The glands at the angle of the jaw had increased to the size of a large walnut; the epitrochlears, on the right side, had increased to the size of a large almond, on the left side to a pea. The inguinals had increased to the size of a hazelnut. The urine at this time was practically negative, specific gravity of 1.010;

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acid in reaction; containing no albumin and no sugar. He was sent home, and put to bed, and on the 18th when seen his temperature was 101⅗°F.; pulse, 120; respirations, 28. The swelling of the face had increased. There was practically no tenderness on palpation of the cervical glands, and the skin was freely movable. There was no edema of the extremities. Percussion showed dullness over the inner half of both clavicles, most marked over the inner thirds and the sternum. Posteriorly, dullness on both sides of the spinal column from the first to the fifth dorsal vertebra. The liver was palpable 1½ inches below the costal margins on the right side in the midclavicular line.

Until the 23d there seemed to be quite marked improvement. The enlargement of the glands had lessened, the temperature had gone down to 99° F., and he was stronger and brighter; so much so that he insisted upon getting up and going downstairs by himself. When seen two days later the temperature was 102⅕° F.; pulse, 120; respirations, 28. The swelling of the cervical glands had largely increased, extending under the jaw, but not painful, and no area of softness. There was considerable abdominal pain, vertigo, nausea, eructations, and vomiting had occurred twice.

From the 25th of September to the 21st of October there was a gradual loss of strength, the pallor became more pronounced (muddy in color), swelling of the cervical glands slowly increasing, puffiness or edema about the eyes, nasal hemorrhages occurring at irregular intervals, but always easily controlled, increasing deafness with marked change of disposition. Instead of a happy, cheerful boy, we had at this time one who was irritable and who had frequent attacks of crying without cause. There were frequent attacks of palpitation of the heart on the least exertion, and, at times, moderately difficult respiration with slight cyanosis and cold, clammy extremities. The abdomen was distended and tense, tympanitic above, with dullness in the flanks, which was slightly movable on change of position. There was no pain on palpation; the mesentery glands were enlarged; spleen was not palpable nor enlarged to percussion. There was quite marked edema of the scrotum.

On the 30th he was removed to the wards of St. Christopher's Hospital, and for the following notes which were taken from the hospital charts, I am indebted to Dr. Judson:—

Marked muscular wasting, especially of the extensors and of

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shoulder girdle. Those of the trunk less so. Skin dry and harsh. Marked general pallor, especially of the face and tongue. No catarrh of the mucous membranes. Pupils are clear and react to light and distance. No enlargement of the thyroid or thymus glands. Chest showed equal expansion on both sides. Marked tenderness on percussion over sternum and clavicles. Lungs normal to percussion and auscultation. Heart: Diffuse wave-like pulsations of precordia; slight epigastric pulsations; no thrills; marked reduplication of the first sound at base and over the body of the heart; faint systolic murmur heard at base. Abdomen is moderately distended and resistent. Mesentery glands are palpable. There is a moderate amount of peritoneal fluid present. The leg reflexes are normal.

On November 4th the swelling of the submaxillary glands had become much reduced. Patient says that he swallows with less difficulty, also that his hearing is improved. Abdominal symptoms remain the same. Tongue more coated and fissured transversely. On the 11th edema had become more pronounced. He complained of sharp pains in the abdomen, especially at night. It was more tender to palpation and showed an increase in peritoneal fluid. Anterior mediastinal glands are larger. Great tenderness over all of the long bones. There is decided edema over all the body, and especially under the eyes. Examination shows prolonged inspiration and expiration. He was taken home on the 12th. On account of the difficulty of controlling hemorrhage from punctures made for blood examination, it was deemed inadvisable to remove one of the lymphatic glands for examination.

During his stay in the hospital his temperature range was from 97⅜° F. to 102° F. It was very irregular, there being no evening rise; the average being 99⅔° F. The pulse range was from 112 to 144, and the respirations from 20 to 36.

When seen at home on the 14th he had quite enlarged tonsils with considerable redness of both fauces and tonsils, with increased temperature and a hard, ringing cough. There were numerous râles throughout the chest; these yielded to treatment, but the edema of the extremities and body increased, the weakness became more marked, edema of the lungs appeared on the 19th, and he died at noon of the 20th.

While in the hospital an eye examination was made by Dr. Krause, which is as follows:—O. D. Responds equally to light ac-

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commodation and convergence. O. D. Pupil oval, 75°. Media clear; disc oval; long axis, 90°. Edges everywhere slightly hazy, and fresh extravasions on the lower edge of the disc. The veins are especially tortuous and dark, and the arteries to a lesser degree. Retinal epithelium absorbed, showing choroidal circulation. Arteries somewhat reduced in size.

O. S. Pupil full. Long axis, 90°; media clear; disc oval; axis, 90°; nasal edge quite hazy. Arteries reduced in size; no apparent hemorrhage; both eyes show neuroretinitis. Fields roughly taken show eccentric contractions.

Examinations of the urine give a specific gravity ranging from 1.010 to 1.013. No trace of albumin or sugar at any time.

The diazo reaction was negative; a few amorphous-urates were found, and a few bacteria. Uric acid was always present in moderate amount.

The examinations of the blood, which were made on October 31st, November 10th, 12th and 14th, are as follows:—

	X, 31.	XI, 10.	XI, 12.	XI, 14.
Hemoglobin,	25%	22%	24%	35%
Red corpuscles,	2,310,000	1,380,000	1,670,000	2,042,000
White "	53,600	51,800	95,440	105,000
Small mononeuclear,	99.2%	80%		91%
Large "		8%		3%
Polymorphonuclear,	.6%	1.1%		.3%
Eosinophiles,		1%		.0%
Myelocytes,	.2%	1%		.25%

In the first examination, while counting 400 leukocytes, two neucleated red cells were seen. In the second examination, ten per 1,000, and in the fourth examination, fourteen in 400. The first three examinations were made by the resident at St. Christopher's Hospital, and the last by Dr. Boston, to whom I am indebted for same.

Although the examination of the blood showed considerable variation in the essential points, it is clear that the case was one of leukemia. It is unfortunate that the examinations of the blood were not made from the beginning, but certain conditions made this almost impossible. An autopsy was not permitted, but an examination of the right epitrochlear gland, which was all that we were allowed to remove, showed it to be the size of a small bean.

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Microscopically, there is seen a large increase in small lymphoid cells, with no giant cells or eosinophiles, and no increase in the connective tissue.

This case has been called one of chronic lymphatic leukemia, from the fact that the child was under our care for almost three months, and from the history that during the early spring and summer there had been slight hemorrhages, which leads one to suppose that the disease had started before that time.

The cause of the leukemia is obscure, there being no hereditary cause found, the only thing of suspicious nature being the history of tuberculosis in the family and the chlorosis or anemia of the mother, both of which, I think, may be excluded as causes in this case. The clinical symptoms were so exactly those of Hodgkin's Disease that, until the examination of the blood was made, it was not possible to exclude this disease; but the examination of both the blood and gland prove conclusively that it was one of leukemia. The spleen was enlarged at no time, the liver increased rapidly in size during the first two weeks under observation, after which no increase was noticeable. There was quite marked variation in the size of both cervical and inguinal glands, with the exception of the last week, when they became progressively larger. The only pressure symptoms noticed were the edema, slight huskiness in the voice, difficulty of deglutition, slight dyspnea and palpitation. During the course of the disease there were a few attacks of mild diarrhea followed by constipation. At no time was it accompanied by hemorrhage, and there was no blood in the urine.

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TWO CASES OF ENURESIS SHOWING TOLERANCE TO LARGE DOSES OF BELLADONNA.

BY H. LOWENBURG, M.D.,
Lecturer on Pediatrics in the Medico-Chirurgical College, Philadelphia.

FAMILY HISTORY.—Patients are brothers; the older is ten years of age, and the younger seven. The mother died of phthisis, the father is living and well. One brother, older than either, is under my care for psoriasis. The older boy has had measles, varicella and pertussis; the younger has had measles and varicella.

Present History.—Both patients are from my clinic at St. Joseph's Hospital. The younger came under observation about three weeks before the elder. The latter came to my clinic on October 21, 1905. The younger has wet the bed at night continuously for the past four years. The elder, according to the statement of the aunt, has wet the bed at night "since birth." At times he would be free for a week or so and then it would return. Examination of both patients is negative as far as it has any bearing upon their ailment. The elder has a long but non-adherent foreskin. The urine of both patients is normal. The younger is rather of a more delicate mould and somewhat paler than the elder. At times he has slight choreic movements about the mouth. On account of his pallor the younger was placed first upon the elixir of quinin, iron and strychnin. Later this was changed to the syrup of iodid of iron in combination with syrup acidi hydriodici. The usual hygienic instructions were carefully given and carefuly followed by the aunt, who has been very devoted and faithful to her charges. The remedies were without effect. The following suppository was then employed at night with good effect while in use but the symptoms returned when discontinued.

℞ Ex. ergot ..... gr. v
Ex. nucis vomicæ ..... gr. ¼
Ex. belladonna ..... gr. ½
Ol. theobrom, q. s.

One suppository at night.

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On October 26, 1905, both patients were placed upon gtt. v. of tr. belladonna *t.i.d.*, the dose to be increased 1 drop a day. The aunt was given a carefully prepared schedule with dosage indicated for each day. She reported regularly each week with the patients. Each schedule was made to last three weeks. At the end of this period a new one was furnished her. The co-operation of the patients was secured to such an extent that they rivaled with each other to have a clear report each week. The following weekly reports are copied from the history charts kept at the hospital.

		WET BED.		TOXIC SYMPTOMS.	
DATE.	DAILY DOSAGE.	OLDER.	YOUNGER.	OLDER	YOUNGER.
10/26/05	gtt. 15	Once.	Once.	None.	None.
11/ 3/05	" 22	3 times.	4 times.	"	"
11/10/05	" 29	0	Once.	"	"
11/27/05	" 36	Once in 2 weeks.	3 times in 2 weeks.	"	"
12/ 4/05	" 55	Twice in 3 weeks.	3 times in 3 weeks.	"	"
12/11/05	" 63	Twice.	Twice.	"	"
12/18/05	" 69	Once.	Once.	"	"
12/29/05	" 79	3 times.	3 times.	"	"
1/ 6/06	" 87	Twice.	Twice.	"	"
1/12/06	" 94	0	0	"	"
1/19/06	" 102	Once.	Once.	"	"
1/26/06	" 109	"	"	"	"
2/ 2/06	" "	"	Twice.	"	"
2/ 9/06	" 123	Twice.	Once.	"	"
2/16/06	" 156	0	"	"	"
2/23/06	" 163	0	0	"	"
3/ 2/06	" 180	Once.	0	"	"
?3/ 9/06	Atropia, gr. 1/80 ? t. i. d.	0	0	"	"
3/16/06	" " 1/60 "	0	0	"	"
3/23/06	" " 1/48 "	0	0	"	"
3/30/06	" " 1/40 "	0	0	Pupils dilated, but react to light and distance.	
4/ 6/06	" " 1/40 "	0	0	Pupils dilated, but react to light and distance	

In administering belladonna the thought was to increase the dose until physiologic symptoms appeared and then to gradually decrease it. When these symptoms failed to appear, however, the question arose as to whether the particular preparation might not be inert. The sister in charge of the pharmacy was then requested to make a fresh preparation, which she did. Later a fresh preparation was prepared by my personal pharmacist, at first in the usual way and at another time from the solid extract. Having reached a daily dose of 180 drops it was determined to give the equivalent of this in atropin. Calculating that 10 drops of the officinal tincture of belladonna was equivalent to grain

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$^1/_{640}$ of atropin, it was determined that a daily dose of 180 drops was about equal to grain $^1/_{35}$ of atropin. Both patients were accordingly placed upon grain $^1/_{80}$ *t.i.d.*, or a daily dose of about grain $^1/_{26}$. This was increased weekly until now they are taking grain $^1/_{40}$ *t.i.d.*, or a daily dose of grain $^1/_{13}$. The point may be raised that the patients did not receive their medicine regularly. I feel, however, that the aunt has not failed in this, as she has been most zealous in her attention to the boys and has reported to me at the hospital weekly with absolute regularity. As a further evidence that the medicine has been administered regularly is the fact that both patients are practically cured, each having wet the bed but once in eight weeks—the older not at all for five weeks and the younger not at all for seven weeks. Following the report of these cases, the dose was gradually reduced to *nil*. This occupied a period of about five weeks, during the entire time of which the patients remained well. Owing to the interference of the father, however, the patients no longer visited the clinic, and I was informed by the aunt, that after a period of about two months had elapsed, without belladonna, the symptoms returned with their original severity.

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A CASE OF ACUTE CROUPOUS PNEUMONIA, WITHOUT PHYSICAL SIGNS, IN AN INFANT OF SEVEN MONTHS.

BY D. J. MILTON MILLER, M.D.,
Philadelphia.

The patient was a baby of seven months. She was artificially fed, and had been digesting her food well when I first saw her on August 2d for a slight diarrhea, which yielded promptly to castor-oil and some modification of the diet. On August 8th there was a return of the fever, much restlessness, but no intestinal disturbance or other evidence of indigestion; the temperature was 103° F.; respiration 45; pulse 120; no cough; and an absolutely negative physical examination of the thorax. The infant had a restless night, and for the next few days presented the same symptoms, viz., great restlessness, cold extremities, high temperature (104° F.), rapid breathing (respiration 50-60), no cough or respiratory grunt, and no physical signs, *i.e.*, no dulness, no alteration in tactile or vocal fremitus, no râles, and no alteration in the respiratory murmur; diarrhea, however, had supervened (four stools daily, liquid, with some mucus). These features were maintained throughout the whole attack. The temperature was of the remittent type, occasionally seen in croupous pneumonia, especially in children, with daily maximums of 104° F. and over. It was fairly constant, with remissions of about 2 degrees until the fifth day, when a pseudo-crisis occurred, the temperature falling from $104\frac{2}{5}$° F. to $99\frac{4}{5}$° F. in five hours. After this, the remissions were greater, the diurnal fluctuations often amounting to 5 degrees. On the eleventh day the true crisis occurred, the temperature falling 8 degrees in six hours (to 96° F.); a moderate post-critical rise followed, after which the temperature was subnormal. During the height of the attack the respiration ranged from 44 to 60, the pulse from 135 to 160, both falling markedly with the crisis. Diarrhea was more or less constantly present, and was pronounced enough to form a disturbing element in the diagnosis, which, for a time, lay between typhoid fever, enterocolitis and pneumonia. It was associated with much

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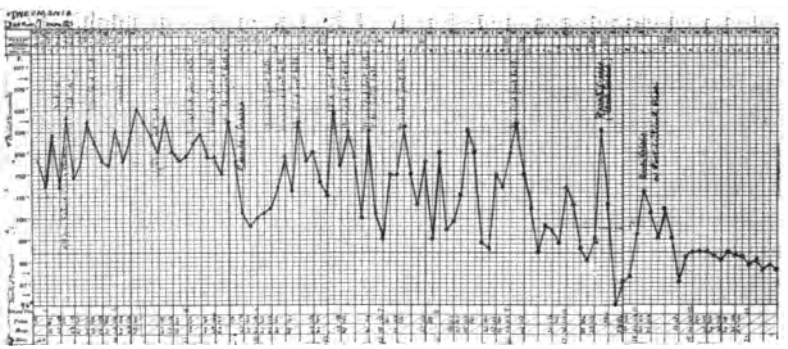
tympany and some mucus. The Gruber-Widal test was negative. Because of want of facilities, the leukocytes were not counted, both physician and patient being in the country, away from home. Again, let it be repeated, that at no time was there the slightest cough or of any of the physical signs of pneumonia. In reference to this point, I might have easily fallen into error, but the child had a most accomplished physician, constantly in attendance by day and night (Dr. Eli Long, to whom credit is due for first suggesting the possibility of pneumonia), and at no time could he discover anything abnormal in the chest.

The case, therefore, was one of those rare types of pneumonia, which run the whole course without pulmonary symptom or physi-



cal signs. Such cases occur, but, I think, are unusual. Most cases of suspected pneumonia usually present, at some time, the ordinary physical signs of the disease. They may appear late (at the crisis, often, for the first time), or in an unusual situation, or be of indefinite character; still, if diligently sought for, they will, as a rule, sooner or later be discovered. Latent, masked or central pneumonia, as this form is often designated, is, I think, more frequent in children, particularly infants, than in adults. It is the source of many errors in diagnosis, being mistaken for meningitis, or typhoid fever, or, if the gastric or intestinal symptoms are marked, for gastritis and gastroenteritis. The diagnosis must be made by exclusion. Sudden onset, high temperature and rapid respiration, should always suggest pneumonia, let the other symptoms be what they may. If to these symptoms there is added a pronounced leukocytosis, the diagnosis of pneumonia can usually

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be made with safety, even though no physical signs be present; the occurrence of a well-defined crisis would render the diagnosis certain. In doubtful cases, frequent and careful examinations should be made high in the axilla, above and below the clavicle, at the supraspinous fossa, and along either side of the vertebral column, as experience has shown that the physical signs are often present in these regions alone.

In conclusion, I feel like offering an apology for presenting a report of this character to this scientific body. Doubtless everyone present this evening has seen cases similar to the one I present; they are certainly not very uncommon. But the wisest fall into error, sometimes, and the recital of just such cases as this is good, in that they lessen our chances to blunder.

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THE DELIVERY OF MILK AND ITS CARE IN THE HOME.

BY GEORGE ABBOTT,

Philadelphia.

We have reason to believe that the Egyptian of 7,000 years ago had a good grip upon medical science. As for dairy science, however, no such antiquity can be claimed. Through the centuries this "slumbered and slept," with practically no awakening until within fifty years of the present time, when in the department of cream separation "deep, cold setting"—a marked improvement upon the "shallow pan"—was speedily followed by the centrifugal separator, wholly revolutionizing the dairy industry. The separator made possible the modern butter factory, wherein a strict control of conditions, together with the harnessing of bacteriology, raised butter-making to the stage of an exact science.

Quite within this period also a material revolution has taken place in the marketing of milk. About the year 1873, whilst farming in Salem County, N. J., we resolved to engage in shipping milk to Camden. Wise and experienced neighbors shook their heads; forty miles of transportation would be found too great in the summer season; at least it would prove so in the absence of the spring house. The attempt was made, however, and the predicted failure was experienced, but failure led to the invention of a milk cooler, quick and effective in action, and the long-distance shipping problem was solved. A few years later while in London, we met with the then newly invented corrugated cooler. Its superiority over our own invention was at once recognized, a cooler of the new type was imported and turned over to the present head of the Star Milk Cooler Company, then an energetic, inventive lad struggling with the problem of milk cooling. The perfected cooler was the result, and at once became a leading factor in giving Philadelphia its supply of sweet and wholesome milk.

In the year 1878 the writer engaged in the retail milk business in Philadelphia. The defects of the system of dipping from open buckets upon the street were obvious, and delivery to the customer in small tin cans from the half pint capacity up was instituted.

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About 1890 the glass bottle was introduced in the delivery of milk, and was placed side by side with the tin can in our trade. By the year 1895 the law of the survival of the fittest had given the glass bottle the field. With the introduction of the milk bottle the problem of sanitation in the delivery of milk was well nigh solved. Given reasonable diligence, the delivery of milk in glass bottles is a nearly perfected method. The impervious, homogeneous walls of the bottle, coupled with the absence of joints and angles, render it possible to make it practically a sterile container. The bottling of the milk away from the dust of the street removes a serious opportunity for germ infection; and the leaving of the bottle in the home of the consumer removes the material risk of the milk being deposited in a germ-laden vessel. Also, the character of the package nearly removes the liability of interference with the milk between the distributing centre and the home of the consumer.

The paper cap with which the bottles are closed gives material protection as a seal to the package, as it is so difficult to remove and replace the cap without leaving some trace of the operation. Further improvement upon this line is desirable, as it sometimes happens that an unscrupulous trade competitor, finding a rival's milk upon the doorstep in the early dawn, will remove the cap, introduce a cigar stump or other filth, recap the bottle and go his way, not forgetting to solicit the householder's trade within the next twenty-four hours.

A paper, one-service container for milk is receiving attention, and it is claimed that its use would advance milk sanitation yet another step. In the light of past experience it would be folly to state that further improvement in this line will not be attained. There are, however, three serious obstacles to the introduction of the paper bottle, viz., that whereas in the case of the glass bottle the consumer can note the cream line as an indication of the richness of the milk, and by holding the bottle aloft she may scan the bottom of the milk, determining thus whether it contains sediment, these tests are of course not possible with the paper bottle. The third obstacle to the one-service paper bottle delivery is the increased cost involved in its adoption. In the business of our firm the added cost of paper over glass would approximate $50,000 per year. There would probably be some saving in operation, but we believe it would fall far short of this large sum. The deduction is that milk furnished in paper bottles must needs be sold at a

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higher price; and he who disregards this factor in dealing with the consuming public will soon be forced to realize that he has reckoned without his host.

Others this evening will show how great has been the latter-day improvement at the farm in the production of milk. The consumer of to-day is reaping the benefit of all these strides of improvement, and at little if any additional cost to himself.

There is an old saying that a chain is as strong as its weakest link. Every link in the chain of milk furnishing has been strengthened up to the home of the consumer. Does the consumer make sure of the result by requisite care? Some do, some do not, but the dealer is held responsible for the strength of the last link in the chain as well as for all that have preceded it; therefore we would offer a few suggestions to the consumer, hoping to make them our allies in this important work of improving our city's milk supply. The keeping of milk in a sweet condition depends upon two factors, viz., cleanliness and refrigeration. The consumer can materially assist in the securing of cleanliness by washing the bottles so soon as they are emptied.

Except in freezing weather, the dealer is at much care and expenditure to keep the milk at low temperature until delivery is accomplished. The consumer should supplement this care and expenditure by continuing to keep the milk at low temperature until used. Upon delivery, the bottles of milk should be promptly placed in immediate contact with ice or ice water. Two points are embraced in this statement, and we desire to emphasize them: first, that the milk should not be left exposed at the door nor to the heat of the kitchen; secondly, that the bottles should be placed in the ice compartment of the refrigerator, and in immediate contact with the ice. If a refrigerator is not at hand, and a water cooler is available, as in business offices, the outside of the bottle and the cap may be cleansed under a spigot and the bottle then placed in the cooler.

We would further plead with the householder not to use the milk bottles as retainers of the various kitchen requisites, but to return them promptly to the milkman; also to realize that normal milk is white in the winter season and usually low in fat in the spring of the year; the latter condition being occasioned by an undue proportion of the cows being fresh. And, again, in so important a matter as the milk supply of the home, we would ask the consumer to manifest appreciation of honesty, intelligence, energy

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and thrift, not through overwrought sympathy giving preference to the milkman with toes and elbows out, because of his touching tale of woe.

And, finally, if a source of milk supply has for a long time proved satisfactory, and there comes a breakdown, please don't assume that the only possible explanation is viciousness or carelessness on the part of the dealer, but keep an open mind, and in addition to castigating him be willing to investigate as to whether the maid has left the milk in the heat until the next meal is over, or has developed a fondness for the cream at the top of the bottle, or has a boon friend that has just embarked in the milk business. Also we ask the family physician not to assume that villainy on the part of the milk dealer is the only possible cause of the baby not thriving. A case in point: Once upon a time a particular friend of ours took his babe to the seashore and called for our milk. The infant at times exhibited acute and alarming symptoms. Our friend, the anxious father, came to us with a long face, as well he might. Milk was the sole or principal diet, therefore the child must be suffering from milk poisoning. Many infants were thriving upon the same milk, and our friend was patient and loyal, but the trouble continued. Well, months rolled by; a domestic who had served in the family of the suffering infant that summer came under our own roof, and then we learned a secret that we have faithfully kept for the narrator's sake. The nurse maid that summer had given the little tot freedom to indulge in mollusks she picked up along the shore, and our informant believed that these occasioned all the trouble.

The opportunity for bacterial contamination of milk is largely in the process of milking. Efforts for germ exclusion in the processes subsequent to that of milking are more easily made effectual. Upon this account the greatest present need is a practical milking machine. Good milkers are difficult to obtain and hard to keep. Laborers prefer work not so constantly recurrent and monotonous, and that has one day's cessation in the seven. Also, Philadelphia's milk supply would be greatly improved by the introduction of refrigerator cars in its transportation.

In common with other trade people, we acknowledge the need of honesty and intelligence on the part of the milk dealers, and believe the quantum of these qualities is growing yearly, and we are sure this is equally true of the milk producers. The lot of these hard-worked and underpaid toilers will be rendered more

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tolerable by the elimination of certain kickers, viz., the kicking cow, the kicking milker and the kicking customer. The kicking cow can be cured by kindness or decapitation, the kicking milker will be sent to more congenial work by the milking machine; the consumer will kick less when he masters and practises the golden rule, and, too, when producer and dealer more nearly attain the goal of perfection.

In passing, we would speak a word of appreciation of the work of the Philadelphia Pediatric Society's Milk Commission. Their efforts are bearing good fruit, and a vote of thanks is due them from the people of Philadelphia. This, however, they will hardly expect; virtue is its own reward. Those under their supervision were skeptical when first it was demanded that through care as much as 95 per cent. of the bacteria found in the general milk supply should be excluded. We had heard of aiming at the moon if one wishes to hit the top of the barn, but to our surprise we have been able to hit the moon, and we thank you for the help you have rendered in securing a better milk supply for our city.

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INDEX

	Part I.	Part II.
Adenosarcoma, Renal		15
Amputation, Intrauterine		1
Angular Deformity of Both Clavicles in Rickets	16	
Anomalous Blood Vessel in Neck	55	
Appendix, Hernia of	38	
Atypical Hemiplegia	12	3
Bacterium Mucosum Capsulatum, Pneumonitis Due to the	59	
Belladonna, Tolerance for Large Doses of	69	46
Bell's Palsy	14	6
Blood Vessel, An Anomalous	55	
Bronchopneumonia, Multiple Neuritis Complicating	35	
Bowel, Wounds of	41	
Care of Milk in the Home	65	52
Cerebellar Tumor		10
Chorea Complicated by Double Mitral Disease	1	
Clavicles, Angular Deformity of, in Rickets	16	
Croupous Pneumonia		49
Dangers of Ordinary Milk	78	
Deformity of Both Clavicles in Rickets	16	
Delivery of Milk and its Care in the Home	75	52
Diabetic Purpura	20	
Diverticulum, Perforation of a Meckel's	39	
Double Mitral Disease, Chorea Complicating	1	
Enuresis, with Tolerance for Belladonna	69	46
Esophagus, Stricture of	42	
Exostoses, Multiple	18	
Fecal Impaction		28
Feeding, Infant	21	
Food Value of Whey Proteids		33
Frequency of Heart Disease	58	37
Functional and Venous Murmurs	63	
Heart Disease, Relative Frequency of	58	
Hemiplegia, Atypical	12	3
Hemiplegia, Latent	13	
Hernia of the Appendix	38	
Hernia, Inguinal	38	
Hydrocephalus, Internal	34	
Hydrocephalus with Premature Development	67	
Impaction, Fecal		28
Infant Feeding	21	
Infantilism	56	
Infantile Scurvy	5	
Infection, Streptococcic	60	

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Inguinal Hernia..... 38
Internal Hydrocephalus..... 34
Intrauterine Amputation..... 1
Intussusception..... 44
Intussusception..... 45
Intussusception..... 46
Latent Hemiplegia..... 13
Laws Governing the Milk Supply 75
Leukemia, Chronic..... 58
Leukemia, Lymphatic..... 40
Meckel's Diverticulm, Perforation of..... 39
Miliary Tuberculosis..... 18
Milk Commission..... 73
Milk, Delivery and Care of..... 75 52
Milk, Dangers of Ordinary..... 78
Milk Supply, Laws Governing the..... 75
Mitral Disease, Chorea, Complicated by..... 1
Molluscum Contagiosum..... 3
Mucosum Capsulatum, Pneumonitis Due to the Bacterium..... 59
Multiple Exostoses..... 18
Multiple Neuritis Complicating Bronchopneumonia..... 35
Murmurs, Functional and Venous..... 63
Muscular Pseudohypertrophy..... 7
Neuritis, Multiple, Complicated with Bronchopneumonia..... 35
Ordinary Milk, Dangers of..... 78
Palate, Ulcer of the Hard..... 22
Palsy, Bell's..... 14 6
Paraplegia and Wry Neck..... 35
Peritonitis, Treatment of..... 48
Perforation of a Meckel's Diverticulum..... 39
Pneumonia in which Physical Signs Were Absent..... 71 49
Pneumonitis Due to the Bacterium Mucosum Capsulatum..... 59
Premature Development, Hydrocephalus Associated with..... 67
Proteids, Food Value of Whey..... 33
Pseudohypertrophy..... 7
Purpura, Diabetic..... 20
Renal Adenosarcoma..... 15
Rickets, Angular Deformity of Both Clavicles in..... 16
Scurvy, Infantile..... 5
Streptococcic Infection In the Newborn..... 60
Stricture of the Esophagus..... 42
Tolerance to Belladonna, Enuresis with..... 69 46
Treatment of Diffuse and General Peritonitis..... 48
Tuberculosis, Miliary..... 18
Tumor, Cerebellar..... 10
Typhoid Fever, Fecal Impaction in..... 28
Whey Proteids, Investigations into..... 61 33
Wounds of the Bowel, Multiple Punctured..... 41
Wry Neck, Spastic Paraplegia and..... 35

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